THE

MODERN TREATMENT OF ALCOHOLISM

AND

DRUG NARCOTISM

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BY

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PREFACE

For some years past I have been entreated by colleagues and friends to write the impressions and experiences gained during my thirty years' treatment of alcoholic and drug inebriates. From a literary point of view, I knew myself incapable of producing a satisfactory work, but when it was pointed out to me that there was no book published dealing fully with the special method of treatment which I had used with more than ordinary success during all those long years, I felt I ought to place my experiences on record, no matter how imperfectly it might be done.

Throughout the book I have written for two classes of readers, namely, those of my own profession who may be interested in the treatment of inebriety, and those of the laity interested in the subject. The book therefore is written in the simplest style possible, the only exception to this being the chapters on pathology and treat-

ment. It is impossible to transmit to paper the skill acquired during long years in the application of any line of treatment, but short of this I have endeavoured to make the book as practical as possible, and sincerely trust it may prove to be so.

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MODERN TREATMENT OF ALCOHOLISM

CHAPTER I

WHAT IS INEBRIETY?

The View of the Ancients

The superiority of the human race to the remainder of the animal world is said to be in the power of reasoning. It is also a matter of popular belief that sheep are the most stupid of all animals, and any one rash enough to compare the human race to a flock of sheep would call down upon his head a terrible storm of indignation and abuse; yet in some matters, and more especially in the matter of inebriety, it is open to grave doubt whether we superior beings have not justified the comparison. However this may be, let us take a rapid survey of the history of inebriety and see how the facts would bear out such a statement.

The ancient Egyptians have left many proofs of their great advancement in civilisation in various departments of life, and it is therefore not astonishing to find that they recognised the truth regarding inebriety, namely, that it was a disease, and treated it as such, using such remedial measures as lay to their hands. Among these were purgatives, rubbings or applications to the head and spine. Herodotus wrote five centuries before the birth of Christ that "drunkenness showed that both body and soul were sick." Diodorus and Plutarch assert "that drink madness is an affection of the body which hath destroyed many kings and noble people." Many of the Greek philosophers recognised the physical character of inebriety and the hereditary influence or tendency which was transmitted to the next generation. Greek laws were enacted forbidding women to use wine and restricting young boys. Frequent reference is made to the madness which sought solace in wine and spirits, and those so afflicted are called upon and urged to give more diligent care to their bodies—a distinct hint of the physical origin of inebriety.

Let us now pass on to the Christian era. In the first century we find St. John Chrysostom emphatically stating that inebriety was a disease like dyspepsia. In the next century, Ulpian, the

Roman Jurist, referred to the irresponsible character of inebriates, and the necessity of treating them as sick men. His views were embodied in some laws which referred more distinctly to the physical nature and treatment of inebriety. Many of the Roman writers referred to the physical nature of the disorder.

Now comes a considerable gap in the history, and nothing further is recorded of this great truth until the thirteenth century, when a Spanish king enacted laws fully recognising inebriety as a disease, lessening the punishment of crime committed when under the influence of spirits. One of these laws provided that when murder was committed during intoxication, the death penalty should be remitted and the offender banished to some island for a period not less than six years.

After a further lapse of three centuries we find France and some of the German States recognising inebriety as a disease, and enacting laws regulating the punishment of crime accordingly.

In 1747, Condillac, a French philosopher, wrote clearly on the subject, asserting inebriety to be a disease, and urging proper provision for its treatment. He stated that the impulse to drink was like insanity, an affection of the brain which could not be reached by law or religion.

Fifty years later, Dr. Rush of Philadelphia asserted the same truth, and supported it by a long train of reasoning. In two essays, entitled "The Influences of Physical Causes upon Moral Faculties," and "An Enquiry into the Effects of Ardent Spirits upon the Human Body and Mind," he described the disease of inebriety, dividing it into "acute" and "chronic" forms, giving many causes, among which heredity was prominent. He urged the necessity of treatment in hospitals for the purpose. To Dr. Rush belongs the honour of giving the first clear statement of how the disease should be treated.

During the early part of the nineteenth century four eminent continental physicians, Dr. Cabanis of Paris, Dr. Salvator of Moscow, Dr. Esquirol and Dr. Buhl Cramner of Berlin, urged the true nature of the disease, and by their writings placed the subject upon a scientific basis, paving the way for a proper study of the disease. Since then many writers have touched upon this matter, recognising inebriety as a disease, and recommending its treatment as such.

The present-day idea of inebriety is interesting in view of what has been written upon the subject, but is one not altogether creditable to us as a profession. In spite of the recorded beliefs of the ancient Egyptians, Greeks, and Romans,

and the spasmodic recognition here and there throughout the long centuries of the true nature of inebriety, it is only within comparatively the last few years that English physicians have adopted the view of inebriety being a disease. This is the more astonishing when one considers the multitude of cases open to study, and the fact that every physician of even moderate practice must have met with numerous cases. I think I may venture to state that there is still a deplorable number of physicians in this country who stoutly refuse to believe inebriety to be a disease, and as firmly refuse to credit its curability. If this is so, and I base the statement upon the beliefs expressed to myself by many medical men during the last fifteen years, one cannot wonder at the views of the laity.

The following incident will illustrate how the question is looked at by, I am sorry to say, far too large a proportion of the populace of this country. A lady friend of mine once related to me the drunken habits of a neighbour of hers, and when I ventured to suggest the question of its being a disease, she became very angry, and looking at me with flashing, indignant eyes, said, "Don't talk such rubbish to me about such a beast. If he were my husband I would horsewhip him or have him placed in prison." I am sorry

to say the same lady later on became a prey to the disease herself. It is unnecessary to emphasise further this point, as every physician probably knows it as well as myself.

On this question I have only one view, namely, that inebriety is a disease, and, curiously enough, although I have spent the greater part of my professional life in the treatment of inebriety, the truth was revealed to my mind long before I was a student of medicine. I had been accustomed as a boy to look upon inebriety as a vice, and either laughed at or pitied the victims as the circumstances moved me, but one night I was making my way to the house of a relative, and amused myself treading in the zigzag tracks made by some intoxicated person in the newly fallen snow. My interest in these tracks increased when I found that as I turned corner after corner they were always before me, and as I knew the various residents in the road where my relative lived, finding them in this road also, I tried to guess who the delinquent could be; but my boyish heart received a great shock when I discovered the footprints led me through the very gate of the house I was visiting. Following them I found my much-esteemed and respected relative sitting in an outbuilding—too ashamed to enter his own home. This man had never

been known to drink to excess before. The impression made on my mind that night influenced my whole career. I knew the sterling character, the iron will, of this man, and I was sorely troubled why this thing should be. His history revealed him as a teetotaller until he was forty-five. Typhoid fever then seized him, and his doctor ordered him to convalesce on port wine. From that time onward the disease grew stronger, despite his frantic efforts to check it, and it was while watching the almost Titanic struggles he made to overcome his weakness that the true nature of inebriety flashed upon me. How well I remember the day I ventured to remonstrate with him for drinking, and his reply, " My boy, I would gladly give my right hand to be able to overcome this accursed craving for drink," and I knew he spoke the truth. There can be no one, who has had much to do with such cases, but has noticed the heroic struggles made by many victims to overcome the terrible craving, and is it not pitiful to hear some friend, or even some medical man, answer their appeal for help by telling them to sober up and behave themselves ?

For twenty years my calling compelled me to live with inebriates. I sat at the same table with them ; I took part in their recreations ; I

watched at their bedside day or night; I heard their histories, received their confidences, and studied their characters asleep or awake. The result of these twenty years of daily and close association with these men and women was an overwhelming amount of evidence in favour of the theory of disease.

Let us look at the above-mentioned case again for a moment. Here was a man with a reputation for strength of character far above the average, and up to the time of his illness he had proven himself a man of inflexible will-power where duty was concerned—he had everything to lose and nothing to gain by drinking; it is rather absurd to ask us to believe that such a man would deliberately sacrifice all for alcohol. I have already said that his struggles were Titanic, and we will take a look at him as he is fighting against the disease. It is early morning; the craving is upon him, and he is using his enormous will-power to overcome the temptation to drink. His hands are clasped behind his back, the finger-nails tearing the flesh, and cold sweat is on his brow while he paces the floor. Backwards and forwards he strides, determined that he will drop rather than give in. It is a magnificent fight of a strong character against the demon drink; although he

must know that alcohol will beat him in the end, he is determined to contest every inch of the ground. It is a noble struggle, yet there are arm-chair critics who will calmly tell you that all alcoholics can stop drinking whenever they like, and they proclaim this from pulpit and platform! I can imagine them among their friends proudly referring to themselves as a proof of their statement that any man can take it and leave it alone if he wishes to do so. If it were not for the harm they do, I would pass them by with silent contempt, merely pitying their ignorance.

CHAPTER II

PATHOLOGY

The Action of Alcohol on Protoplasm

The basis of all animal life is a substance termed protoplasm. It is composed of 75 per cent. of water and 25 per cent. of solids. The latter is a highly complex chemical compound of which a considerable proportion is albumen. If the white of an egg is poured into alcohol it is coagulated; the white of an egg is composed principally of albumen. If the action of the alcohol is allowed to proceed beyond a certain point the coagulation becomes permanent. On the other hand, if a large excess of water be added before the albumen is coagulated too firmly, the action is stopped and the albumen redissolved. From this we may infer that if it were possible to coagulate all the albumen in the human body life would become impossible.

The action of alcohol upon albumen is taken advantage of in many ways. The dermatologist

when he wishes to harden a section of the skin in order to enable him to slice it into transparent films for the microscope, places it in absolute alcohol. Anatomical specimens are also preserved indefinitely in this way. Temperance lecturers are fond of coagulating albumen in the test-tube by means of alcohol, before their audiences, in order to show its effect upon the body, and while they are not justified in inferring so much, such experiments serve a useful purpose. The action of alcohol in the human body is very complex, so many factors have to be taken into account, and we are not justified in claiming that which science has not proven. It is only in late years that much progress has been made in this direction. If we study the results of these researches, we find that alcohol has a direct action on the protoplasm of the living cell in both plants and animals; and if we can demonstrate this we are fully justified in assuming that the same action takes place in the protoplasmic cells of the more highly organised body. Dr. Sims Woodhead says regarding this :

" *Action of alcohol on protoplasm.*—If we find that alcohol exerts a definite action upon the various kinds of animal and vegetable protoplasm, which can be studied outside the human body, and if at the same time we can obtain

even a small amount of evidence that alcohol acts similarly on the human body, we are justified in assuming that the tissues of the body react to and are injured by alcohol much as in the case of the tissues that we can study directly, the difference, if any, being one of degree rather than of kind.

"It has sometimes been said that the method of study of the action of alcohol on the protoplasm or tissues of growing animals or plants is unscientific. Is this the case? Surely if we are to study the effect of alcohol on the tissues and organs of the body, we must first, if possible, determine the action of alcohol in various doses and in various dilutions upon normal tissues in which we can, to a certain extent, control the conditions of the experiment. Indeed, whilst it must not be assumed that certain substances, alcohol amongst them, which act as poisons to a single kind of protoplasm, necessarily act in the same way upon another, we may, I think, accept it that, should these substances exert a deleterious action upon many kinds of tissues and many kinds of protoplasm other than those of the human subject, they will probably be poisonous to our more highly developed tissues. It must be remembered that experiments on this point have been accumulating for some time back. I shall here mention but a few of them as examples. J. J. Ridge found that 1 part of alcohol in 100 of water, if used

to moisten geranium or grass seeds, interferes with their germination; they germinate slowly, and if the use of this solution be continued, the plants grow slowly, and the green colouring matter (chlorophyll) on which they depend for their respiration, and partly for their nutrition, is not formed in proper quantity. In the case of the geranium, both growth and chlorophyll production are so markedly affected, the 1 per cent. solution interfering with growth so seriously that at the end of six weeks plants so 'watered' are about half the size of control plants, in addition to which they are delicate and sickly. Fresh-water organisms, the medusa, and the daphnia, (water-flea), are rapidly killed by a solution of 1 part of alcohol in 4000 of water. Then, again, alcohol, even in weak watery solution or used as a vapour, arrests or interferes with the development of the eggs of organisms so widely apart in the scale of animal life as the blowfly, the frog, and the hen. Rauber's experiments on animals and plants are also of interest, as, though dealing with the same question and in the same way, they are of later date, and cover a much wider field than that covered by any other series of experiments; moreover, they were carried out independently of any of the earlier observers. Rauber noted the influence of alcohol in various strengths upon different plants, and upon animals in various stages of development—on the hydra, on tape-worms, on earth-worms,

leeches, crayfish, various kinds of fish, the Mexican axolotl, on birds and mammals, including the human subject. He found that in 10 per cent. solution, with which he usually worked, alcohol acts as a definite protoplasm poison, all forms of cell life upon which he experimented being more or less affected; that plants became shrivelled and etiolated, that animals became intoxicated, and that those who live in water soon succumb. Crayfish placed in a 2 per cent. solution of alcohol succumb in a few hours, perch in a similar solution rapidly become intoxicated, fall to the bottom of the vessel in which they are placed, and die, though, if they are transferred to pure spring water before death takes place they may recover in the course of a few hours."

Some of his experiments were carried out on Bayerinck's phosphorescent bacilli, a protoplasm of low organisation, having a definite and easily measured activity. These experiments showed conclusively that alcohol retarded the activity of these bacilli, and he directs attention to the fact that this action of alcohol on living protoplasm of nerve cells must be far greater. He says:

"It must be remembered that we are dealing with a low form of protoplasm, and that the function of light production does not require anything like the same complex conditions necessary for the continued life and activity

of the nerve cell, and to that extent it will probably be far more resistant to the immediate action of alcohol."

He also refers to its well-known action on the protoplasm of the yeast organism. As the result of his researches he arrives at the following conclusions :

" We may, then, accept it that all protoplasm, whether the basis of animal or plant life, is injuriously affected even by small quantities of alcohol, and that under certain conditions there is a marked interference with nutrition, power of movement, and reproductive functions, that even where immediate death of the organism as a whole does not supervene, marked degenerative changes result, the animal or plant under these conditions living on a lower plane as regards power of movement, nutrition, and reproduction than does the healthy organism into which no alcohol has been introduced."

The Effect of Alcohol on the Circulatory System

Its well-known effect upon the small vessels is readily seen in the telangiectasis of the chronic alcoholic, where the paralysing effect of the alcohol upon the vaso-motor nerves producing dilatation has through repetition become per-

manent. It has been noted that the direct injection of alcohol into the blood vessels causes dilatation of the vessels through which it passes. That the same takes place in the small vessels in the interior of the body is accepted by all. Regarding the changes which take place in the cells of the blood vessels, competent observers have noted the following: Fatty degeneration of the muscular walls, subsequent calcification producing the well-known pipe-stem variety. Such vessels are unsuited to resist sudden pressures, and may give way under them. They also are unable to aid the propulsion of the blood because of their loss of elasticity and contraction, and thereby throw more work upon the heart, causing dilation of that organ with all its attendant evils. Its irritant effect upon the vessels of the gastric and hepatic organs when taken in moderate but oft-repeated amounts is well seen in the post-mortem room. The constant dilatation induces active congestion in the surrounding tissues, followed by abnormal nourishment of the part, with its subsequent formation of fibrous tissue, the contraction of which causes compression and even obliteration of the vessels themselves. Its effect on the heart is seen in the fatty degeneration of the heart muscles and subsequent dilatation. This condition not only

follows excessive use of alcohol, but also moderate use, and is one of the factors in the well-known excessive mortality of users of alcohol in some diseases and operations, but other factors may participate, and to this I shall refer later on.

Regarding cardio-vascular changes due to alcohol, Dr. Sims Woodhead says :

" In connection with chronic alcoholism, most physicians and pathologists are in agreement that cardio-vascular disease—that is, disease of the heart, of the blood vessels, or of both—is one of the commonest causes of death. Moreover, it is now generally recognised, and in this the physicians are backed by the physiologists, that the exhibition of alcohol brings about the dilatation of the smaller blood vessels, especially those of smallest size, the capillaries, a dilatation which appears to be due to a paralysis of the nerves carrying the stimuli that cause contraction of the small muscles surrounding the blood vessels. Here, as elsewhere, when there is continuous or intermittent want of activity of muscles, the result of changes in the nerves, there is, along with the diminished activity, an impairment of the nutrition of the muscle, accompanied by some waste, or even degeneration, of this structure. We are not surprised, therefore, to find that fatty degeneration and calcification of the muscular coat, already described, is very frequently met with in patients

who succumb to chronic alcoholism. Moreover, wherever there is marked degeneration of tissue, as those tissues waste their place is taken by tissue of a lower type — so-called connective tissues or scar tissue. The muscular coat of the vessel forms only part of the vessel wall, but it will be found that wherever it is affected the inner coat, as well as an outer covering of connective tissue, are also as a rule considerably altered. Without attempting to give any special account or classification of the changes that take place in the vessels as a result of chronic alcoholism, I may say that in most cases evidences of its poisonous action may be met with in the vessels, large and small alike.

"In old people it is difficult to trace the cause of these degenerative changes, but in apparently young people who have suffered from chronic alcoholism it is usually fairly easy to demonstrate the connection between cause and effect; and it is my experience that in certain cases where I have been able to observe certain changes in the walls of the blood vessels, especially where I have been able to make out some pathological condition in every part of the vessel wall, I have been able to eliminate all causes but chronic alcoholism, of which, therefore, I look upon the thickened vessels in the various organs and tissues of the body (in these comparatively young people) as the direct result. These changes appear to arise from a proliferation

of the connective-tissue cells, and, secondly, from the accumulation of waste products, or even in some cases of tissue débris in the tissue spaces, consequent upon which there is an invasion of these spaces by leucocytes or scavenging cells.

"Wherever this is marked, there is always a further increase of large cells that help to form a fibrous or scar tissue. In certain cases these processes proceed slowly and steadily, and at no time does there appear to be any great amount of new cellular tissue formed; there is simply a gradual but continued increase in the amount of scar tissue. This increase is almost invariably accompanied by some form of degeneration in the special tissues of the organ in which the process is going on. The stages of this process are well illustrated in the changes that take place in inflammation of the liver. First, there is at one extreme an acute inflammation, characterised by dilatation of the blood vessels, numerous scavenging cells, and a gradually increasing number of the larger scar-tissue-forming cells, whilst at the other extreme is the chronic alcoholic cirrhosis, the hob-nail or gin-drinker's liver, in which the scar tissue seems in many cases to be formed almost directly, though on careful examination it will be found that here and there, as in the acute process, there is usually some evidence of the cellular origin of the new tissues, and also of the presence of a number of the scavenging cells—certain indications of the presence of an irritant, and probably also of the

accumulation of waste products in the tissues. Moreover, in this condition of gin-drinker's liver, as the scar tissue increases in quantity, so, as in the case of the muscular coat of the blood vessel, the liver cells waste away and undergo fatty degenerative changes; in some cases they disappear altogether, the fibrous tissue advancing and gradually replacing them. Whether this scar-tissue formation goes on in the heart, in the kidneys, in the liver, in the blood vessels, or in the nerves, the process is essentially the same. It must be associated with the accumulation of poisonous and waste products in the small spaces through which the nutrient fluid passes to the tissues, and must also be associated with marked disturbance of functional activity. Wherever such conditions are present, the changes in structure assume greater or less proportions, according as the organ or tissue in which these changes are met with plays a more or less important part in carrying on the nutrition of the body, or in determining the nervous or muscular activity. Moreover, it must be remembered that in all cases the most highly developed cells are first affected, and that, as these become wasted and degenerated, new tissue, never highly developed, and often of very low type of tissue—corresponding to the white scar tissue that one sees in an old wound—comes to take their place; indeed, the contraction of the old scar tissue of a wound has its exact homo-

logue in the contracting scar tissue met with in the liver, in the kidney, and in the brain."

Gastro-Intestinal Tract

The effect of alcohol on the mucous membrane is the same as its effect on the skin; in addition it seems to increase the muscular activity of the stomach so as to cause its contents to be expelled into the duodenum. If the alcohol is given in concentrated form its action is more marked. If given in large quantities and concentrated, it diminishes the amount of gastric and pancreatic secretions; but if given in small quantities and well diluted, it is said to increase the flow of the secretions (Bernard and others). In large quantities alcohol has a distinctly retarding effect on the activity of the salivary, gastric, and pancreatic ferments (W. Hale White). Authorities differ as to the amount necessary to effect this retardation; some place it as low as 2 per cent., while Sir William Roberts states that this retardation of the salivary and gastric secretions does not take place until 40 per cent. of proof spirits is present, and in the case of pancreatic secretion that 20 per cent. is necessary to arrest digestion. So far as the gastric secretion is concerned, it is thought by some that this re-

tardation is due to the precipitation of the pepsin. Hale White says regarding this :

"The long-continued action of alcohol, especially in excessive quantities, on the gastric mucous membrane causes catarrh, and the stomach becomes coated with a thick tenacious mucus, and digestion is thus greatly hampered, the food in the stomach undergoing fermentation and decomposition. In addition to a direct action on the mucous membrane, alcohol may cause fatty degeneration of the muscular tissues, amongst others the muscular coat of the stomach, and in this way produce dilatation of the stomach which still further hampers digestion. Alcohol may aid digestion indirectly, owing to its solvent action on fat. The action of alcohol on the stomach, therefore, is mixed, since it is probable that it has a stimulating effect by its direct action on the mucosa and so may aid digestion, in addition to helping this process by causing the propulsion of the gastric contents into the intestine and by increasing the gastric juice if the alcohol is dilute. The increased secretion of saliva produced may also aid gastric digestion, as saliva is a most efficient excitant of the gastric secretion. On the other hand, there is no doubt evidence that if it be administered in large quantities, and especially if concentrated, it retards digestion, checking the activity of the gastric glands and the action of the digestive

ferments. Alcohol is absorbed rapidly from the digestive tract, and it also increases the rate of absorption of other substances, as can be shown in the case of iodide of potassium."

Effect on the Brain and the Nervous System

Dehio and Berkley have both carried out experiments on acute alcoholism in the lower animals. They both noticed marked degenerative changes in the lining membrane of the small vessels of the brain, whilst in the spaces surrounding the vessels evidence was found of what Berkley calls an exaggerated condition of waste, a "clogging" due to the accumulation of rapidly produced waste products. Before, then, we come to the nerve cells, the proper cells of the brains, we find marked changes occurring in the vessel walls and in the spaces surrounding them. In some cases small clots are formed in the vessels—clots which interfere with the transmission of the blood along the normal channels. This clogging of the vessels and of the spaces around affords evidence of a very active breaking down of the tissues, but it is still more important as a cause of continued interference with the nutrition of the surrounding tissues, thus playing a part

in the determination of further degeneration and breaking down of the surrounding tissues. With reference to the effect of alcohol in the brain cells, Dr. Sims Woodhead says :

" Under the action of considerable doses of alcohol, just as under the action of large doses of diphtheria toxin, remarkably definite and readily recognisable changes may be demonstrated in the nerve cells of both man and the lower animals, especially those near the plugged vessels and lymph spaces already referred to. The nerve cell first loses its peculiar mottled appearance, and then swells up. In the small branches that are given off from the long processes leading out from these cells very characteristic changes may be seen—changes indicating that profound modifications have taken place in them, the result of the action of the poison. They are never met with in the healthy human brain, nor are they found in the brains of healthy animals."

And, again, he says with regard to its action upon the nerve fibres :

" First of all, in these toxic conditions the outer covering breaks down ; then after a time the central core corresponding to the wire—the axis cylinder as it is called—becomes irregularly thickened and thinned alternately, so that, instead of a solid rod of equal thickness, we have

something almost like a string of beads. Wherever this irregular thickening is produced, the impulses are irregularly transmitted along the nerves, and the patient finds that his experience is no longer to be relied upon; he is thoroughly at fault, he is unable to translate the sensations irregularly transmitted by these altered nerves, and he is unable to keep his various muscles under control, simply because his experience no longer informs him what force he should send along a certain nerve in order to bring about the required stimulation of a muscle or group of muscles. It has been pointed out, however, that, in addition to these changes in the actual nerve fibres, there is, in alcoholic poisoning, an increase in the amount of fibrous tissue formed between them, just as around the small vessels of the liver and certain other organs."

The Effect of Alcohol on Phagacytosis

There is such an excellent account of this by Dr. Sims Woodhead, that I have taken the liberty of quoting it fully here from his recent lecture on the subject:

"Recent bacteriological research has enabled us to throw a clear light on alcohol in relation to the specific infective diseases. Numerous workers, following up the lead given by Abbott, have accumulated much evidence that alco-

holised patients and animals are more readily attacked by these various febrile diseases—inflammation of the lungs, erysipelas, typhoid and other fevers — than are non-alcoholised patients. Dr. Deléarde's experiments have been very frequently quoted, but they are so important that I do not apologise for again bringing them forward. This observer wished to determine whether and how alcohol weakens the resisting powers of the body, and if it does, what are the factors by which any such weakening may be brought about. Many of you may be aware that it is possible to protect animals against severe attacks of certain diseases by the production in them of mild attacks of the same diseases. A child that has suffered from scarlet fever seldom contracts that disease a second time, and a patient who has had small-pox or typhoid fever is usually immune against a second attack. For his experiments Deléarde selected three diseases—rabies or hydrophobia, tetanus or lockjaw, and anthrax or splenic fever of cattle. In tetanus and anthrax the specific micro-organism producing the disease has been described, and in all three cases a diminished susceptibility or artificial immunity had been induced. All three diseases may be induced in acute and fatal form, or, if the virus be weakened by special methods, a milder attack, which under ordinary circumstances protects the animals against more severe attacks of the disease, may be produced.

"Using rabbits, he gave to each of a certain number of them a quantity of alcohol, commencing with about 1½ drachms, and gradually increasing the dose to 2¾ drachms a day. This quantity of alcohol undoubtedly interfered with the nutrition of the rabbits, as its administration was followed by 'slight falling off of weight; but after a time this fall ceased, and then the animal gradually got to its normal weight.' It accommodated itself to the new conditions, as it were; but although it was restored to its normal weight, very marked changes had taken place in its fluids and tissues. Having prepared his alcoholised animals, several non-alcoholised animals were 'vaccinated' against hydrophobia. After they had acquired a considerable degree of immunity—that is, when they were no longer very susceptible to the hydrophobia poison—alcohol was administered to them as above. They were then injected with what, under ordinary circumstances, would be a fatal dose of the hydrophobia poison. All the animals remained alive. The tissue had become less susceptible owing to the vaccination, and so firmly rooted was this diminished susceptibility that alcohol was not able to interfere with it. The animal remained immune.

"He then carried out a second series of experiments, the procedure for the production of immunisation being carried out as before, with this difference, that whilst it was going on the animal

received alcohol in the quantities mentioned above. Here the result was most unexpected and startling. No immunity was produced; the animal remained just as susceptible to the disease as if no attempt had been made to vaccinate it. The alcohol so interfered with the reaction between the vaccine and the tissues that no immunity was produced. Carrying the experiment a step further, he took one of the animals to which he had been giving alcohol for some time, and, discontinuing the alcohol, he, after a few days, vaccinated with hydrophobia virus. He now found that a certain degree of protection was conferred. Here, however, the protection was not so marked as in the case where no alcohol had been given at any stage.

"These experiments satisfied him that acute alcoholism has the effect of preventing the acquisition of a condition of immunity. The effect of alcohol on the tissue cells is not so marked, however, that when its administration is stopped they cannot regain some of their original powers and properties. Further, when the property of immunity has been acquired before alcohol is given, the cells retain this property even in the presence of considerable quantities of alcohol. In the case of tetanus or lockjaw, however, alcohol exerts a much more serious effect, for even animals that have been vaccinated against lockjaw, when alcoholised, lose their insusceptibility to the disease, and may

be readily infected, in this differing markedly from animals vaccinated against hydrophobia. Rabbits vaccinated against lockjaw and simultaneously alcoholised do not acquire immunity at all readily ; under these conditions it is very difficult to protect them against the lockjaw poison. Here, however, as in the case of hydrophobia, animals first alcoholised and then vaccinated against lockjaw may acquire an insusceptibility to the lockjaw if the alcohol be stopped as soon as, or before, the process of vaccination is begun.

" It is evident from these experiments that even after immunity has been acquired alcohol may destroy it, a fact which must be remembered in connection with treatment. Whenever a patient is recovering from an attack of one of the specific infective diseases, he recovers, because, during the course of the disease, he has acquired a certain specific immunity, the result of changes in the tissues and fluids of the body. If alcohol impairs this immunity in any way, or interferes with its production, the patient's chance of recovery must necessarily be diminished. Continuing his experiments, Deléarde found that it was almost impossible to confer immunity against anthrax if the animals were alcoholised during the period that they were being vaccinated, and although animals first alcoholised for a period and then vaccinated—the alcohol being stopped during the period of

vaccination, as in the case of hydrophobia and lockjaw—acquire a certain degree of immunity, they rapidly lose condition when infected. They certainly suffer more severely than do the non-alcoholised animals vaccinated at the same time and infected in the same manner.

"Deléarde points out that clinical experience bears out these experiments. Indeed, his attention was first directed to this subject by observations on an alcoholic patient bitten by a mad dog. This patient appeared to be much more susceptible to the action of hydrophobia poison than a second patient bitten and inoculated under otherwise much less favourable conditions. The first case was that of a man of thirty years of age, of intemperate habits, who was bitten on the hand by a dog. Though carefully subjected to a complete antirabic treatment, he succumbed. The other case was that of a child, aged thirteen years, who, on the same day, was bitten on the face by the same dog. The course of antirabic treatment was exactly the same, but here, although the bite was more severe and its position more dangerous—the head and face being the most dangerous positions in which a patient can be bitten—the child recovered. In comparing these two cases, the only factor that seemed to be more unfavourable in the case of the man than in that of the child was the intemperate habits of the former, who took alcohol even during the period of treatment. Deléarde

was so strongly impressed with what he saw in the wards and in his experiments, that he strongly advises patients who have been bitten by mad dogs to abstain from the use of alcohol, not only during the actual process of treatment, which is carried out for the purpose of producing an active immunity against the hydrophobia poison, but also for a period of at least eight months afterwards, during which time there appears to be a steady and persistent increase of immunity.

"Another most remarkable series of experiments are those of Laitinen of Helsingfors.[1] These were carried out in Professor Fraenkel's pathological laboratory at Halle, and were in great part supervised and controlled, or at any rate observed, by the Professor. They are perhaps of even greater importance than those already quoted, from the fact that much smaller doses of alcohol were used than in either Abbott's or Deléarde's experiments. The dose for each animal was calculated and based on the amount given as a nutrient substance, or a medicine, or both, in a well-known sanatorium at Davos. This worked out at from 4 to 6 drops to every pound weight of the rabbit used. Laitinen was careful to keep well within this quantity, and to use the aclohol in a well-diluted form. It was given over long periods—weeks or even months before the final part of each experiment

[1] *Acta Soc. Sc. Fennicæ*, 1890, Helsingfors, 1900, t. xxix. No. 7.

was commenced—and its use was continued for some time after the experiment had been going on. He also performed a series of experiments on animals to which doses of alcohol large enough to produce acute alcohol-poisoning were given.

"Into animals so prepared he introduced the bacilli of splenic fever, tubercle bacilli—the bacilli of consumption—and the poison produced by the diphtheria bacillus. The dose of the virus or poison was in each case very carefully measured, both as regards virulence, number of bacilli, and quantity of poison. As the result of numerous experiments, he was convinced that alcohol, whether introduced subcutaneously or by the stomach, induces in the animal body an increased susceptibility to infection by the organisms with which he worked, or to poisoning by their toxin.

"Abbott, Deléarde, and Laitinen, supported by Fraenkel, Calmette, Pearce Gould, and others, draw the practical conclusion that physicians and surgeons often commit a grave error in administering even comparatively small doses of alcohol to patients suffering from the special diseases with the viruses of which these various experiments were made. It is also agreed that in certain other infectious diseases—such as pneumonia—or intoxications such as that produced by a snake-bite, the use of alcohol is not merely useless, but often actually harmful.

"Some of the earlier, and even some later, observers were of the opinion that the diminished resistance noted in the above experiments must be the outcome of abnormal conditions in the various organs—alimentary canal, liver, kidneys, heart, nervous system, etc.—or that it might be due to a kind of starvation, in which condition animals are undoubtedly more susceptible to the attacks of infective fevers. This explanation, however, though accounting for some of the phenomena observed, is not sufficient to account for all.

"In pneumonia and snake-bite, wherever recovery takes place, there is an increase in the number of leucocytes or white blood corpuscles in the part affected, and this increase appears to be a necessary factor in the cure of the patient.

"Deléarde insists that it is necessary that, in all microbic infections or intoxications, the integrity of the leucocytes should be carefully maintained. In the presence of alcohol, just as in the case of opium-poisoning—as pointed out by Metchnikoff and his pupils—this integrity is not maintained. Two Belgian observers, Massart and Bordet,[1] in carrying out experiments on the attraction and repulsion of the living leucocytes by various bodies, found that alcohol, even in very dilute solution, strongly repels leucocytes, driving them away from its neigh-

[1] *Journ. de Med., de Chirur. et de Pharmac.*, Bruxelles, 20 fevrier, 1900; *Ann. de l'Inst. Pasteur*, Paris, 1891, t. v. p. 417.

bourhood. If, then, we have alcohol circulating in the blood, even in very minute quantities, the leucocytes do not make their way into the blood at all readily, and therefore cannot be carried from place to place. Alcohol thus prevents the white cells or leucocytes from coming up to attack invading organisms ; it also assists other poisonous substances that, in more or less concentrated form, have the power of repelling leucocytes, the two substances acting cumulatively, and driving away, or in certain cases paralysing, these white cells of the blood. How important this is may be gathered from the fact that the leucocytes appear to act as a kind of sanitary police force. They make their appearance wherever dead matter is to be removed ; they attempt to prevent the invasion of disease-producing organisms, and once they come to grips with their opponents, they will die rather than give way. Their work is so important, however, that if their opponents are too strong they often attempt to keep out of their way for a time until they are weakened, or they have had time to prepare themselves for the fight. As the presence of alcohol is a new factor, and certain disease-producing organisms, getting into the tissue of animals and patients during the time that alcohol is holding back the leucocytes, meeting with no resistance, set up a severe attack of the disease, the organisms obtain such a foothold that the leucocytes are never able to drive

them out. This, however, is only one of the factors to be taken into consideration.

"In all diseases, then, in which leucocytes help to repel or remove the invading organisms, or in which they retain their power of reacting to, or of carrying on their functions, in the presence of toxins, we should expect that alcohol would deprive them of some of this power, or interfere with the acquisition by these cells of a greater resisting power. Alcohol, then, in the first place, interferes with the reactions of the cells to poison, thus interfering with the production of immunity; beyond this, it reinforces the poison formed by the disease-producing organisms, often with results most disastrous to the patient.

"Another factor in this action of alcohol in increasing the susceptibility to disease is undoubtedly its power of interfering with nutrition, especially of young, unstable, or highly-organised tissues—its action on young children and young animals, unborn or born, is now fully recognised; and, secondly, of lowering the temperature, especially when given in what may be called poisonous doses. When large doses of alcohol are given, the temperature is lowered beyond the normal, and during this temporary lowering of temperature the body seems to be specially susceptible to the attacks of infective agents. Pembrey,[1] one of the authorities on this subject, has pointed out that the fall in temperature is

[1] In Schäfer's *Text-book of Physiology*, 1900, vol. ii. p. 53.

due to increased vascularity of the skin and increased activity of the sweat glands, the normal reaction to cold being paralysed by large doses of alcohol.

"Most authorities agree that alcohol taken in small quantities causes only a slight lowering of temperature—less than half a degree; but when considerable—that is, poisonous—doses are given the effect is much more marked. The lowest temperatures recorded during life are observed in drunken persons. The temperature of a normal rabbit exposed to cold falls only about 5° F., whilst the temperature of an alcoholised rabbit may fall as much as 34° F. Similarly, the fall in temperature of a normal guinea-pig exposed to cold is only from 0·2° to 0·36° F.; of an alcoholised guinea-pig exposed in the same way it may be as much as 18° F. Now, Pasteur found that, by placing a hen with its feet in cold water, and thus lowering its temperature, he could render it susceptible to anthrax, though up to that period those who had worked with this disease had been unable to produce anthrax in the hen. Similar observations have since been made by other observers.

"We must, however, look beyond this factor of temperature in our search for predisposing causes. Not only the cells of the body, but the fluids in which these cells are carried, and which give material to, and receive waste or other excreted products from them, play an important part in

resisting disease. It has been demonstrated by Ehrlich, Myers,[1] and other workers on this line of investigation, that the introduction of certain substances into the body modifies its fluids in a most remarkable manner. For example, if egg albumen be introduced into the abdominal cavity of the rabbit, it is taken up into the blood, and in the process of assimilation by the body it appears to affect the cells in such a fashion that they secrete something into the blood that, added to egg albumen in solution outside the body, causes its precipitation.

"Uhlenhuth,[2] extending the scope of these experiments, found that the blood serum from an animal—ox, sheep, etc.—when introduced into a rabbit brought about the production of some substance in the blood of that rabbit that, when added to the blood serum with which the rabbit was first injected, threw down a precipitate which could be readily measured. Nuttall,[3] continuing this work, found that by this method it was possible to distinguish the blood of different species of animals—human blood from cow's blood, dog's blood from sheep's blood, and so on. Further, when the red blood corpuscles of one animal are introduced into the abdominal cavity of another species, it is found that if a drop of blood be taken from the ear of

[1] *Lancet*, London, 1900, vol. ii. p. 98.
[2] *Deutsche Med. Wochenschr.*, Leipzig, 1901, Jahrg. xxvii. S. 82.
[3] *Journ. of Hyg.*, Cambridge, 1901, vol. i. p. 367.

the second animal and added to the blood of the first there is a breaking-down of the red blood corpuscles in the first blood. Alcohol appears to interfere with certain of these processes connected with the breaking-down of blood (hæmolytic processes) or to accelerate them. As in the case of the production of immunity, so in the case of hæmolysis or breaking-down of the blood, the presence of alcohol interferes with the ordinary physiological processes, with the result that certain of the phenomena that appear when no alcohol is given cannot make their appearance when it is administered. In each cell in our body we have, according to Ehrlich,[1] a central group of molecules, sometimes a very complicated one, around which are arranged a series of links or hooks—receptors, as they are called. To these links or hooks other albuminoid groups are attached, and it is through the hooking-on of these albuminoid groups that the cell is nourished; without them it could not link on to itself the material that it requires for its nutrition. These receptors or hooks have a special affinity for other albuminoid molecules, which, however, have to be linked on in a special fashion. Certain molecules acting as anchoring chains have one form of link at one end and another kind of link at the other, one form holding to the cell, the other attaching the mole-

[1] "Croonian Lecture," *Proc. Roy. Soc. Lond.*, 1900, vol. lxvi. p. 424.

cule to be absorbed; without this intervening and accommodating link the two could never be connected. This connecting chain is spoken of as a fixative, and it is a curious fact that such a kind of link is always met with in the blood. It is very stable, and is not destroyed by high temperatures. At the outer end of this fixative, and hooked on to it, as it were, are certain groups of atoms which appear to be derived from living cells. They have certain characteristics similar to those met with in the 'ferments,' and they are destroyed at a temperature of from 50° to 55° C. They appear to play a most important part in the nutrition of the cell, and, curiously enough, an equally important part in poisoning them. These are called complements or alexins.

"Abbott and Bergey[1] find that in alcoholic poisoning these complements are irregularly but distinctly reduced, and they maintain that this reduction accounts, first of all, for the impaired power of nutrition met with in alcoholised animals, on the ground that there are not sufficient complements to combine with the necessary nutrient proteid or albuminoid substances circulating in the blood. Moreover, the lack of these complements is of importance, from the fact that without them it appears to be impossible for any immunity to disease to be set

[1] *Centralbl. f. Bakteriol. u. Parasitenk.*, Jena, 1902, 1 Abt., Originale, Bd. xxxii. S. 260.

up in an animal. They offer this as an explanation of the fact that in alcoholism impaired nutrition is first observed; that this is accompanied or followed by an interference with the production of immunity. I have already mentioned that the complement is said to be derived from the white blood cells of the body, or from the connective-tissue cells, or both, and it is evident that this diminution in the amount of the complement present may be the result of diminished or markedly altered activity of the leucocytes and of certain other cells of the body. In any case, the diminished amount of complement in the blood should be associated with the diminished number of circulating leucocytes observed by Laitinen, as an indication that the leucocytes are not responding to the calls that have been made upon them in connection with the nutrition and scavenging of the body, and that they are not assisting in the production of the immunity that, under the influence of the poisonous substances that are generated in the body, should be going on during the course of infective fevers.

"There can now be little doubt that alcohol interferes with the process of phagocytosis; moreover, both the microphages and macrophages—the small cells and large cells entrusted with the scavenging work of the body—are rendered less active by alcohol, not only as regards their movement, but also as to their power of taking

in foreign bodies and of manufacturing complements."

Alcohol and Heat Loss

Sir Lauder Brunton has given us an excellent account of this action of alcohol in his well-known work *The Action of Medicines*, and I cannot do better than to quote it directly from that source:

"*Alcohol increases heat loss.*—Now amongst the drugs that are used as antipyretics, I may mention one that you might at first hardly think of, namely, alcohol. Alcohol has a double action in lowering the temperature; it seems to lessen oxidation, and it dilates the vessels of the skin; and yet this idea of alcohol being an antipyretic seems entirely contrary to the popular notion that alcohol warms you. The popular notion is based upon the feeling of warmth produced by alcohol, and the alcohol does warm a man in one way: it warms his skin and warms the ends of the nerves in his skin, and thus conveys to his sensorium the feeling of warmth. It is through the condition of the nerves of the skin that we judge of temperature. A man during the cold stage of an ague fit is shivering with cold; he turns himself round and round before the fire and tries in vain to get warm. Yet if you take the temperature in that man's mouth or in his rectum, you will find it is very considerably above

the normal. He is in a state of pretty high fever, and is far too warm already inside, and yet he is trying to get warm because he feels so cold. But the cold he feels is in the outside of him, his skin is cold, its vessels are spasmodically contracted, they will not allow the warm blood from the interior of the body to reach the skin, and consequently the cutaneous nerves are not warm, and the patient feels cold. At the end of the cold stage the vessels of the skin dilate, then the warm blood from the interior of the body pours over the surface, and the man feels red-hot. Although he feels so much hotter than in the cold stage, he is not really so. On the contrary, he is probably cooler than he was in the cold stage; but he is now conscious of the heat of which he was before unconscious. Now the effect of alcohol is like that of the change which occurs in the ague patient when the cold passes into the hot stage. Alcohol warms the skin at the expense of the internal organs by dilating the cutaneous vessels.

"In the ordinary healthy condition of a man, when he is exposed to cold, the vessels of the skin contract, and the skin is chilly; but the blood, not being allowed to circulate through the skin, is kept warm, and so the heart, the lungs, and the vital organs generally are prevented from being chilled down. You will find on looking at the records of Arctic observers that they did not like men to drink alcohol, and that,

as a rule, alcohol is prohibited amongst men who are employed upon Arctic expeditions. But it is not only doctors or officers who prohibit alcohol under such circumstances. The men themselves have become conscious that alcohol is dangerous when there is great external cold, and one of the most striking examples of this that I ever heard of was told me by a friend who had been out in Canada. In some of the woods the lumber trade is carried on. The men who are called 'lumberers' live in camps far away from civilisation. During the whole winter they fell the trees, and these are simply dragged along the snow to the nearest river, where they are made up into rafts. In the early spring, when the snow melts, they are allowed to float down, and the men float down upon them. When they get to a large town they in a very short time expend the whole of their winter's earnings in getting drunk. The moment they get into the town they set to work to get drunk, and they remain drunk till they have spent all their money. But those very men will not have any alcohol near them in the winter. On one occasion a man conveyed a cask of whisky into one of their camps, and the first thing they did was to take an axe and knock a hole in the cask, so that the whole of the whisky ran out. The reason of this was, they did not dare to have the whisky there, for if it was there they felt quite sure they would drink it, and if they drank it they were likely

to die. A story of the same sort was told me by the late Dr. Milner Fothergill. A party of engineers were surveying in the Sierra Nevada. They camped at a great height above the sea-level, where the air was very cold, and they were miserable. Some of them drank a little whisky, and felt less uncomfortable; some of them drank a lot of whisky, and went to bed feeling very jolly and comfortable indeed. But in the morning the men who had not taken any whisky got up all right; those who had taken a little whisky got up feeling very unhappy; the men who had taken a lot of whisky did not get up at all: they were simply frozen to death. They had warmed the surface of their bodies at the expense of their internal organs. Some time ago Sir Joseph Fayrer was out deer-stalking in the north of Scotland. He offered his flask to the keeper. The keeper said, 'No, Sir Joseph, I will not take any to-day; it is too cold.' And yet if he had drunk the whisky he would have felt for the time being very much warmer than before. So that alcohol tends to act as an antipyretic by dilating the vessels of the skin, and so allowing a loss of heat."

I am able to corroborate the statements he makes regarding the Canadian climate, but would wish to point out one fact in connection with this, and that is that the statement regarding the Canadian woodsmen in which he refers to their drinking up the proceeds of their winter's

work upon reaching the Settlement in the spring, fortunately no longer holds good to the same extent as it did some years ago. During the last fifteen years a remarkable improvement has taken place in the drinking habits of the community generally, and has proportionately affected the class to which Sir Lauder Brunton refers.

One cannot do better than sum up the toxic effects of alcohol in the following statement by John Rose Bradford :

"The long-continued taking of alcohol is followed by a great variety of toxic effects, some temporary and others permanent—some local and others general. As mentioned above, gastritis and dilatation of the stomach are apt to occur as a result of excessive drinking. The toxic effect, however, is not confined to the stomach, but affects also the liver, causing the well-known hepatic cirrhosis. Although this disease is unquestionably associated with excessive drinking, it is not clear whether the effects are entirely due to alcohol or to other substances present, inasmuch as the disease is not simply correlated to the quantity of alcohol consumed. It may reach a high development with excessive beer drinkers and spirit drinkers in some countries, *e.g.* England, whereas it is rarer in other countries, as for instance Scotland and Ireland.

"Renal disease, more especially chronic Bright's disease, is also often found associated with alcoholism. Fatty degeneration of the heart, liver, and kidneys is not infrequent; a particular variety of dilated heart is not uncommonly seen in those addicted to alcohol, especially in the middle-aged, the dilatation being deepened by degenerative changes in the heart wall. . . .

"The toxic action of alcohol on the nervous system is very marked, producing delirium tremens, alcoholic insanity, and peripheral neuritis. The toxic effects of alcohol are often seen in people addicted to taking it in large quantities, although such persons may never suffer from acute intoxication.

"Alcoholics, quite apart from any definite organic disease, suffer from a lowered resistance, so that they succumb readily to acute illnesses or to accidents. A familiar instance of this is the fatal course that pneumonia is likely to take in them. Delirium tremens may be seen as the result of a single debauch, and sometimes it is seen in habitual drinkers who are not necessarily in the habit of getting drunk, and more especially when such persons fall victims to acute illness or to accidents. It may occur as a result of stopping the taking of alcohol in persons who are accustomed to large quantities."

CHAPTER III

THE CAUSES OF INEBRIETY

Heredity

Inebriety considered as a disease would be influenced probably by heredity similarly to other well-known diseases, and this we find to be the case. I do not think the question of heredity as a cause of inebriety is denied by any authority of the present age. The evidence is so overwhelming in support of such a view, that any one attempting opposition to this theory would have a very difficult, if not impossible, task. When asking alcoholic patients to what they attribute their drinking propensities, how often has one heard the reply, "Oh! my father drank to excess," or "My parents drank to excess and I inherit the craving"? Or else this reply, "There is alcoholism in our family, and I am a victim of heredity." It is the rule to find other members of the family ready to corroborate this history of inebriety in the patient's family. Or this question

is often asked by the friends of the patient, "Do you think, doctor, that there is any chance of a cure, for he inherits the weakness?" A large number of alcoholic patients consider themselves incurable simply because they are convinced of the hereditary nature of their complaint. Of course, their belief in the herditary taint is not proof of its being so, but one hardly ever gets a history of alcoholism in which this factor is not more or less prominent in some form or other.

Alcoholism in parents does not always show itself in the one way in their offspring: it may break out in one or more members of the family as alcoholism, or there may be a history of alcoholism in one member and various neurotic troubles in others. Alcoholism, neurasthenia, hysteria, chorea, insanity, imbecility, epilepsy or simple nervousness may be present, one or all, in the offspring of drinking parents. Norman Kerr quotes two very striking illustrations of this; he says, "In one household with a drunken father, two girls were hysterical, while a third was imbecile. Of the sons the eldest was an epileptic, the second boy died suddenly of alcoholic apoplexy, and the third was an idiot." In another family, he says, "The eldest daughter committed suicide, the second lost her reason and became quite demented, and the youngest was the incarnation

of hysteria. The elder son killed himself by poison through drink, and the younger is an apparently confirmed sot." Again, he says, "The most saddening and perhaps the most serious of the numerous evils inflicted by alcohol on human kind is the hereditary transmission both of the drink crave itself and of the pathological changes caused by indulgence in alcohol."

An enormous amount of evidence in favour of the hereditary nature of alcoholism has been contributed by writers on the subject, but it is manifestly impossible to do more in a small work like this than to rapidly scan this field of facts. My own experience leads me to endorse this view. The history of alcoholic heredity goes back even to mythology, where we are told that Vulcan lame was conceived by Jupiter drunk. Diogenes, addressing a stupid child, said, "Thy father was drunk when thy mother conceived thee." Aristotle said that "a drunken mother would produce drunken offspring." The legislation of Lycurgus promoted drunkenness in vanquished nations in order to destroy patriotism. The Carthaginian law prohibited any drink but water on the day of cohabitation with one's wife. Leaping across the intervening centuries, we find the alienists of to-day unanimous in support of this theory. Those who are qualified to write

upon the subject differ somewhat regarding the percentage of cases of alcoholism directly traceable to heredity, but this is not astonishing, in view of the fact that statistics are compiled from widely different classes of patients. Those with much experience in the out-patient department of hospitals know how stupid such patients can be regarding their family history, and statistics gathered from an institution containing only this class of patient would naturally vary greatly from those compiled in one where only a better class was received. Again, some may exclude all evidence not directly alcoholic, while others will include indirect evidence. Personally I include both, and consequently find the percentage very high ; in fact it is difficult to avoid finding a history of heredity if you are dealing with the educated classes and accept both direct and indirect evidence. Here are the percentages given by some of those qualified to speak on the subject : Dr. Dodge claims 50 per cent. ; Dr. Bare only 25 per cent. ; Dr. Kerr over 50 per cent. ; Dr. Mognan claims over 80 per cent. ; Dr. Parrish, 80 per cent. ; Dr. Crothers, 80 per cent. ; Dr. Day, 70 per cent. ; Dr. Mason, 60 per cent.

The transmitted manifestations of alcoholic parents to their offspring are manifold. From

the unstable brain to the insane in the mental system, from highly nervous to those suffering from neurasthenia, persistent neuralgias, chorea, hysteria, etc., in the nervous system, and from slight departures from the normal through all sorts of deformities, to monsters in the physical. We here quote the excellent conclusions reached by an exhaustive study of the subject by Dr. Dacaiene :

" 1. Under the name hereditary alcoholism is included the totality of the pathological manifestations transmitted to a child by one or either of his parents who are drinkers, and sometimes both.

" 2. The inheritor of this taint, as well as the drinker himself, can hand down not only his own vice but a special morbid tendency, a particular neuropathic state, which can always be charged to inebriety.

" 3. The alcoholic inheritance may at first be dormant. When it exists it shows itself in infancy or later, or in another generation. It shows itself as congenital paralysis, convulsions, epilepsy, hypochondriasis, idiocy, etc.

" 4. The increase in the number of the insane, of the number of suicides, of crimes and misdemeanours—such are the results of hereditary alcoholism.

" 5. It is in hereditary alcoholism that can be found the explanation of certain monsters which

come from time to time to horrify society and scandalise the courts of law.

"6. These degenerate beings are smitten with sexual impotence. The female inebriate is apt to abort, and lastly the mortality of the newly born among drinkers reaches a figure truly frightful.

"7. It has often been proved that in the case of drinkers there is a loss of stature and physical force.

"8. To sum up, hereditary alcoholism, as well as acquired, determines an enfeeblement of the species, the destruction of the family, and the degeneration and abasement of the race.

"9. From a medico-legal point of view, the hereditary inebriate, in particular the dipsomaniac, should be regarded most of the time as irresponsible, or at least his responsibility should be regarded as very limited. He is a sick man who should be cared for, remembering that he presents an undeniable propensity to sickness, that he possesses a defective intellectual organisation—in a word, that he is a degenerate. If the moral sense has not completely disappeared, in his case at least its use is not accurately regulated. The judge, then, ought to take into account this moral state in appreciating his acts."

Traumatism as a Cause

One frequently meets with cases of excessive use of alcohol alleged to be due to some injury

to the head. That these are not merely "fairy tales" meant to deceive the doctor may be gathered from corroborative scars and history given by friends. The history of one case is practically the history of all cases of this class, and this fact alone must go far towards establishing the claim of those who declare the possibility of traumatism as a cause of inebriety.

The history in these cases is always remarkably clear as to the habits of the patient before the accident, the nature of the accident, and the radical change in the patient's habits subsequent to the accident. This is only on "all-fours" with what surgical records abundantly show in other directions. "He has never been the same since the accident, doctor," is a statement often heard in hospital practice. According to the nature of the injury inflicted, this may refer to the mental, moral, or physical parts, one or all, but it is chiefly to injuries to the head that a change in a patient's drinking habits is due. The patient may have been a total abstainer up to the time of receiving the injury, but he no sooner resumes his usual avocation than a remarkable change is noticeable in his drinking habits. He appears to lose control over himself, and takes to drinking like an old toper, but with this remarkable difference—he is unable to stand the

effect of alcohol so well, and a much smaller amount produces intoxication than in the more seasoned drinker. One of my friends was a case of this kind. His history previous to the accident was that of a man who, while he was not a total abstainer, was quite able to take it or leave it alone at will. He was taking a morning ride, when his horse jibbed, throwing him on his head, which was badly cut. Nothing unusual was noticed while he was confined to his bed, but on going out he began drinking daily, and was practically never quite sober for over two years. I was able to ascertain that the amount used each twenty-four hours did not exceed 8 oz. of whisky. I had every opportunity of studying this case closely, and I am convinced that he was absolutely unable to withstand the temptation to drink. During this time there was also a great change in his personal habits. He became quite indifferent regarding his personal appearance, whereas before the accident he was just the opposite. He lost all interest in his friends, abandoned all his usual recreations, took no further interest in what was happening in the world, did not even open his newspapers, never attempted to read a book—in fact his whole existence was summed up in eating, sleeping, drinking, and talking of putting an end to himself. He recovered entirely after about

twenty-eight months, and has never taken or desired to take any intoxicating beverage since—a matter of nearly five years. After his recovery he gradually resumed all his old-time interest in himself, his friends, and the world about him. His memory, which he lost, has been completely restored; and to-day, looking at him, one would not judge him to have been at one time an apparently hopeless drunkard.

The majority of traumatic cases unfortunately are difficult to treat, and are often apparently incurable. The nature of the injury received may account for this. If it is one which can be removed or from which the patient spontaneously recovers, the desire to drink may cease, unless, as sometimes happens, a chronic inebriety has become established. If the cause remains the disease remains, and nothing appears to help the patient to a complete cure. In these cases it does not seem to be an important point whether the patient was a teetotaller or not previous to the accident, for many of these unfortunates were total abstainers up to that time.

Another class of cases akin to these are those caused by sun-stroke or heat-stroke. That heat-stroke has caused a temporary or permanent mental change is well known, and a number of inebriates date their alcoholic excesses from

such an attack. They resemble the traumatic cases in their sudden beginning and in the small amount of alcohol necessary to produce intoxication, but they differ in one important point, namely, in the effect of changes in temperature. The man whose inebriety dates from a heat-stroke is always affected by changes in temperature during the warm season. This is well illustrated in the following history. A man was sent to the Norwood Sanatorium by the superintendent of an industrial colony. As he was a skilled gardener, I placed him in charge of the glass houses and kitchen garden. He was an old soldier who had served in India and Egypt for years, and his conduct while abroad was excellent up to the time of the sun-stroke. His attacks of inebriety corresponded to some unusual change in the temperature or to a certain phase of the moon; regarding the latter I was inclined to be very sceptical, until repeated proofs left me no other conclusion. When the attacks ended, he would prove himself a hard-working, steady gardener, very much ashamed of his late debauch, and only too anxious to recover lost ground. One day it was necessary for him to spend hours in the greenhouse while it was at a high temperature. I called in to see how the plants looked, and noticed a restlessness

about him which indicated the probability of an outbreak. I asked him if he was not feeling well. He replied, "Sir, if I stay in this heat much longer I shall go mad." I instantly ordered him to attend to some outside work, and after an hour or so in the cooler air he regained his usual composure. With this incident in my mind I was able to trace some of his outbreaks to prolonged stay in an overheated greenhouse. Regarding the claim of this patient that the moon affected his drinking habits, it is curious to note that another patient of mine from the same colony, who was well acquainted with his habits, told me that the fact had been well noted there by all. I state this for what it is worth. I am not prepared to either accept or reject it, and will only remark, in passing on to the next cause, that considering the powerful effect of the moon on tides, one might reasonably see a cause for some effect upon circulation, especially in one the equilibrium of whose circulation has been temporarily or permanently disturbed. We do know that men who having drunk alcohol indoors without it apparently affecting their sobriety, immediately feel the effect upon going out into the cold air. This is no doubt due to the sudden chilling of the surface of the body, which by contracting the already

distended superficial blood vessels drives the blood internally, and thus causes an increased flow to the brain ; hence the sudden intoxication.

Climate

Any attempt to describe the effect of climate upon alcohol drinking would lead me into an enormous amount of literature, but a few of the main facts may not be without interest to my readers. That climate has an influence upon the prevalence of inebriety no observer doubts. Climate affects individuals in various ways, hence the constant stream of travel in search of climatic conditions more suitable to the travellers' particular requirements ; and just as climate affects the health, so does it affect the conditions which make for or against inebriety.

The climatic conditions of Canada are particularly remarkable in this respect. In the vast North-West of that country electrical conditions play an important rôle. Even in Ontario the air is dry and highly charged with electricity. I have seen a boy while pulling off his woollen vest in a dim light produce a perfect shower of electric sparks, this being accompanied by a loud crackling noise. A lady combing out her hair with a vulcanite comb often produces

electrical phenomena which would prove very startling to those who only know our English climate. I was once present at a family gathering in Toronto when some one suggested lighting the gas with their fingers. I suspected some joke, but not only was it done, but I found by following a few simple directions I could do it myself. All I had to do was to shuffle my feet across the carpet for a minute, and then with a poker in hand present the end to the turned-on gas jet, when a discharge of electricity producing a spark an inch long leapt across from my body through the poker to the metal gas pendant, igniting the gas. Some persons were able to light the gas by merely snapping their fingers. Two junior members of the family amused themselves by shuffling their feet across the carpet, and then approaching some member of the gathering unseen would give them a sharp shock by merely presenting one finger to any part of their body. They were practically Leyden jars or condensers, and they charged and discharged themselves in this manner. Another striking instance of the electrical conditions of North America is illustrated in the following incident. A friend of mine, an electrician, left Toronto, where the above conditions existed, to take up an important management in one of the North-

Western States. He told me how delighted and fortunate he was to obtain the post. I met him a few weeks after in Toronto. He explained his return by stating that the electrical conditions there were so intense as to make work impossible. He could neither rest nor sleep, and was forced to resign his position owing to these conditions.

Now this highly charged climate has a peculiar effect upon drinking. The need of a stimulant is not felt, as the air is a natural stimulant, and if one accustomed to alcohol in England goes to the North-West and attempts to continue his English habits of beer or spirit drinking, he generally comes to a rapid end in an attack of D.T.'s. The "remittance men" who were sent out to North-West Canada often died through the effect of drink plus climate. It was poor policy on the part of parents or guardians to land them in such a climate with perhaps a weakness for drink and no occupation. It meant the end.

That alcohol is a dangerous drink in cold climates is well illustrated in the following incident, of which I was an eye-witness. A farmer was bringing a load of hay to Toronto to sell. The weather was very cold, being some degrees below zero, and instead of walking to warm himself, he entered an inn and had a glass of hot whisky and

water, and then, climbing back upon his load, resumed his journey. The horses apparently knew their way well, for they brought the hay safely into the Market Square and then stopped, with the owner sitting on the top of the load still holding the reins in his hands. He was dead, and had been so for some time—frozen stiff. What happened was simply this; the alcohol he took dilated the superficial vessels of the body, permitting an enormous escape of heat, and he began to freeze in consequence. Now it is a well-known fact that in the process of freezing to death a great drowsiness comes on, and unless the victim is aroused in time he dies while asleep. Sitting on top of his load, he no doubt dozed into eternity. Alcohol is a deadly drink in very cold climates, that is why it is prohibited in all Polar expeditions. It is a great mistake for drinkers to think that alcohol warms them, for the opposite is the case. What happens is this; the small blood vessels of the surface of the body are dilated by the alcohol, and produce a sensation of warmth in the sensory nerve ends of the skin. The impression received by the brain is the same as that produced when a chilly person closely approaches a good fire. This sensation of warmth is apparent long before it is possible for the body heat to be raised

appreciably. In the case of the farmer mentioned above, if, at the time when he was apparently feeling warmer for the drink he had taken, a clinical thermometer had been placed under his tongue, it would have shown a fall instead of a rise in temperature.

In cold countries the great majority of deaths by freezing are due to alcohol. The Canadian knows this, and avoids it. In the great lumbering camps in that country no alcohol whatever is allowed; and indeed it is recorded that on one occasion when a visitor brought a case of spirits into the camp, the men rushed upon it and destroyed it with their axes, spilling the whisky upon the snow. These same men who would not allow a drop of spirits in the camp would go into the towns in spring and drink up all their winter's earnings in a few weeks' time. Regarding Canada generally, I may say that the climate being so invigorating there is comparatively little drinking done, and that mostly by newcomers from this side. An Englishman, a friend of mine, was staying at the Queen's Hotel, Toronto, and ordered a small Bass for his lunch. During the meal he looked about the large dining-room to note what the other guests were drinking, and to his surprise he found he was the only one drinking an alcoholic beverage. After two or

three days of a similar experience, he ceased to order his Bass, because it made him conspicuous. I have had many meals in Canadian hotels, and my friend's experience exactly corroborates my own. While speaking of the effect of climate in Canada upon drinking habits, I may add another experience occurring during a visit there four years ago. I stayed with many friends from Montreal to Chicago, my visit covering a period of nearly three months, and during that whole time I was never offered or saw any alcoholic beverage except in one house, and that was a half-bottle of whisky kept solely for medicinal purposes, and which was only brought out on account of a sudden illness. These were all people of a well-to-do class, and the very soul of hospitality, yet it never occurred to them to keep or offer spirits to their guests. If a man does attempt to drink in Canada as he did before leaving Engand, it generally leads to his downfall; the moderate drinker here becomes an excessive one there.

Some people cannot go for an ocean trip without drinking to excess while on board, but one cannot safely attribute this to change of air, although I have shown above that change of air of a certain character does produce inebriety, for there are several factors at work aboard ship,

and while the change of climatic conditions may be responsible for some cases at sea, the most powerful factor to my mind in many cases is the sudden withdrawal of the restraining environment of home influences and the rebound which naturally results. Once while crossing from New York to Liverpool, we had as a fellow-passenger a most gifted Presbyterian minister. Day after day this man became incapably drunk, and those frequenting the smoking-room were treated to the painful spectacle of his being carried off to bed by his wife nightly. She would enter the room, throw her strong arms about him, and, refusing all help, march off with her burden, casting indignant glances at those remaining. I am quite convinced she blamed the occupants of the smoking-room for his excesses. In that she was wrong, for it was an understood thing among the frequenters of the room that no one ought to accept his invitation to join him in his indulgences. The sudden withdrawal of all the restraining influences of his parish to the opposite condition found in the smoking-room must have been an important factor at least. I have seen many instances of this excessive drinking at sea, and on inquiry have been able in a large majority of cases to ascertain that the outbreak was quite contrary to their usual

habits at home. Sea-trips affect different people in different ways. They exhilarate and tone some, while they depress others, and I think there can be no doubt that they disturb the nervous balance in most travellers. This disturbance may be just sufficient to unbalance the will-power of the individual. It must not be thought from the above remarks that I consider sea-trips unsuitable for inebriates. Under proper conditions and control the tonic effect of sea air may do much good in restoring the lost nerve tone, but the indiscriminate sending to sea of inebriates without proper control, in the hope of benefit, is to be strongly deprecated.

Disease as a Cause of Inebriety

There are many diseases which, directly or indirectly, may be said to cause alcoholism. In a sound, healthy organisation alcoholism is impossible. There must be a weakened condition of some portion of the system before the disease of inebriety can affect its victim. In a large majority of cases these conditions are so evident as to be unmistakable even to the eye of the laity. In others they are less marked but yet readily recognised by the attending physician, while in a small minority they are obscure. The

list of diseases causing alcoholism is a very long one, and reference can be made here to only a few of the more general ones.

Heart Disease as a Cause of Inebriety

Many cases of alcoholism are caused by heart disease. The majority of these patients are women who have at some period of their cardiac trouble been directed by their doctor to take a little stimulant to relieve their distress. The intention of the physician may have been innocent enough, but I cannot help feeling very strongly about the almost criminal carelessness of such prescribing, when the victims present themselves for treatment. It is not so much a question of what is prescribed as of how it is prescribed. When we consider how completely our patients rely upon our advice and how confidently they carry it out because it is our advice, and how much more likely this is to be done if the following of our directions is pleasant to them at the same time, and when one considers what terrible results often follow the advice given, I think I am justified in saying that the prescribing of alcohol is one of the most responsible acts of a doctor's life; and yet, as we all know, many medical men who would carefully watch the exact dose and

effect of morphia or arsenic upon a patient, light-heartedly and carelessly tell their cardiac patient to take a little stimulant when the distressing symptoms return. I have emphasised this point, because I believe that many of those careless prescribers of alcohol never have an opportunity of seeing the results of their carelessness, or, if they do see it, it is in circumstances which do not connect the cause with the result in their mind. If it is desired to prescribe alcohol it ought to be done in the safest manner possible. In cases of heart disease the quantity is not large, and can be readily prescribed in the form of pure C_2H_6O in some disguise or other. The respect of a patient for a bottle of medicine will in all probability prevent him from taking more than the ordered dose, whereas if he knows it to be alcohol, his limitation is fixed not by the doctor's orders but by his desire and access. If he is reproved for taking it by his friends, he lightly says, "Oh! my doctor ordered it," which to his mind settles the question. In regard to these heart cases one can readily see why they are so prolific of alcoholism, when one thinks of the fear of impending death which the patient experiences and the rapid relief felt on taking the stimulant.

I do not here purpose dealing with the value or otherwise of prescribing alcohol in cardiac

cases, but I would earnestly entreat those of the profession who prescribe it to disguise the real nature of the remedy. If this were done in every case, I am convinced there would soon be a considerably lessened proportion of alcoholic women. Surely that is worth a little extra trouble. In the beginning the women's first care is to get relief; she is not yet an alcoholic, and so long as she has measured doses of medicine by her which give her that relief she is content; but let her once learn that it is alcohol she is relying upon and she is undone. She at once feels free to use it in larger doses and at all times, and, her resisting power being already greatly decreased by her physical ailment, she readily becomes a confirmed alcoholic. I have had many such patients under my care, and in every case they asked the same question, "What am I to do if I cannot take brandy when I feel faint?" If they had always had a properly disguised dose by them there would have been no need for the question, and in very many cases no excess.

Indigestion as a Cause of Inebriety

Functional heart cases are just as prolific sources of alcoholism as organic heart cases. The symptoms of distressed feeling are far more

severe in these than in organic trouble in the early stages, and consequently more liable to create alcoholism. They are secondary in character, and the most common exciting cause is gastric disturbance. When the stomach is overloaded either by food or gas, it incommodes the heart, which practically rests upon it with only the diaphragm separating them. The distended stomach not only incommodes the heart, it also irritates it, and then the patient feels a sudden alarming sensation as if he were going to die. Now, in the case of the distension being due to an accumulation of gas, an immediate relief is experienced when the gas is belched up, and anything which will do this is eagerly taken by the patient. Unfortunately for him it is generally alcoholic stimulants which are most frequently at hand, and, having once experienced the relief obtained from their use, he continues to rely upon them to his ultimate destruction. There are numerous innocent antispasmodics which will relax the cardiac orifice of the stomach and permit the gas to escape just as well as alcohol will. I was much struck with what occurred to a lady patient of mine some years ago while eating her dinner. She was apparently in her usual health, and was laughing and talking at the time. Suddenly with a look of horror and fear upon her face

she attempted to stand, clutching wildly with both hands at her throat ; then instantly pressing them against her heart and with staring eyes and livid complexion, moaning that she was dying. The picture was startling enough even to a medical man, coming so suddenly in the midst of a pleasant dinner-party, yet such a simple remedy as a teaspoonful of bi-carbonate of soda stirred into a glass of hot water was sufficient to produce immediate relief—by relaxing the tension of the stomach and consequently relieving the irritation of the cardiac organ. In a few minutes with the exception of the shaken nerves the patient was as well as before the attack. Nothing astonished the patient more than the fact of such a simple remedy being so efficacious. I well remember her saying afterwards, "Here I have been drinking brandy for years under the impression that nothing else would save my life!" We all know how readily alcohol produces indigestion. First the congestion, then the inflammation, then the chronic gastritis with excess of mucus and deficiency of gastric juice, producing a long train of distressing symptoms ; it thus comes about that those who resort to alcohol to relieve their stomach trouble only succeed in increasing it later on. I here quote an instance of indigestion as a cause of alcoholism. I do so fully because I

have found many patients in whom indigestion was the starting-point of their drunkenness, and the story may help to fasten the principle in the mind. A young married man, aged about thirty, a farmer, came for treatment for alcoholism some fifteen years ago. At this particular date my sanatorium was overcrowded, and I turned a large room in my own residence near by into a dormitory, and in this room the patient was given a bed. His progress was very similar to that of the other patients for the first four weeks, which means that at the end of the first two or three days he asked for no more whisky, or felt the desire for any, while he rapidly improved in every direction during the next three or four weeks—eating, sleeping, and feeling extremely well. Then a number of the patients attended an entertainment in the village, and he accompanied them. It was noticed that he seemed dull and out of sorts, while the others were laughing heartily at the jokes from the stage. About midnight the patients sharing his room were awakened by his uncontrollable sobbing, the cause of which he refused to state. Next morning, feeling ashamed of having disturbed their rest, he told them the reason. He said, "All you men are going home cured, while I must return to my wife and children still cursed with the craving for drink, after

I thought I was cured, and it was this knowledge which broke me down last night. I did not know how I was to face my wife after sending her such hopeful letters. I thought I was completely cured, and now I must go back to the same old life, and I am afraid it will break her heart." On being asked why he thought he was not cured, he replied, "Last night the old craving came back as strongly as ever, and if I had not been with you all at the theatre I would have gone and had a drink." He was advised to see me at once, which he did. After listening to his story, I asked him to describe the form the craving took. He said it was a peculiar sensation in the stomach, and had always been the beginning of his drinking bouts. Remembering this man's unusually hearty appetite at table, and also his disinclination for exercise, I examined his tongue and found it heavily coated. I then ascertained from him that the so-called craving had an earlier history than that of the alcoholism, and he admitted that he used to take the whisky at first to relieve this peculiar sensation in the stomach. The whole secret was now out: first the indigestion, then a glass of whisky to relieve it, then the intemperance, and finally the belief that the sensation was a craving because it was the starting-point of every outbreak of drinking. I told him to cease

worrying, as he was quite mistaken about it being a craving ; it was only indigestion due to overfeeding, and insufficient exercise, and that in twenty-four hours it would vanish without any alcohol whatever. A blue pill that night, followed by a Seidlitz the next morning completely removed the so-called craving. He was very grateful and happy when he learned that the pain was not a craving for alcohol, and determined to avoid a recurrence of it in future by regulating his diet and taking more exercise. I heard from his wife years afterwards, and she assured me that her husband never tasted or allowed in his home any stimulants, and was quite a different man from what he had been for years before his treatment. If I have dwelt somewhat at length upon this case, it is because it represents a large class of patients, and shows clearly that indigestion does cause inebriety. But a still more important point is this—what would have happened if his indigestion had not occurred until he had returned home ? It would have changed his whole life, as he would have relapsed at once, lost all hope, and gone completely to the dogs. It is most important to warn these patients before leaving the sanatorium of what may happen. Another patient had a similar experience, the fancied craving coming on at the station while he was

waiting for his train in order to return home. He wisely decided to leave by a later train and return to the sanatorium to consult me. I found the same cause at work, relieved his fears, and had the satisfaction of treating several friends subsequently recommended by him, and of meeting him for years only to find him more grateful each time for the cure effected. An inn stood opposite the station, and he told me afterwards that when he thought the craving had returned he became so hopeless and depressed that he debated with himself for some minutes as to whether he would go over and start drinking or would return and see me. Surely his good angel must have been very near him at the time. When we consider the various forms which indigestion assumes, one cannot help wondering how large a proportion of alcoholic cases have their origin in gastric ailments.

Neurasthenia as a Cause of Inebriety

Men indulge in alcoholic stimulants from three main motives, namely, from a desire to be sociable, in order to relieve some temporary ailment or discomfort, and to satisfy a craving for the stimulant. There are many subdivisions, but if we accept these three main motives we will find

the second one very prolific of causes of inebriety, and one of the most potent of these is neurasthenia. The term neurasthenia means nerve exhaustion. Some authors would divide the disease into a long list of subdivisions according to the peculiar form the symptoms assume, while others content themselves with the simple term neurasthenia, classing all the symptoms under it. In either case, the main point for the student of inebriety is the almost endless list of symptoms belonging to this disease, and their reaction upon the mind of the patient. For the benefit of the lay reader of this little work, it may be as well to enumerate a few of the leading symptoms of neurasthenia. Some of these patients are very easily fatigued, fatigued beyond all comparison to the exercise taken, and have a strong disinclination for exertion of any kind. This may be so marked as to cause the sufferer to feel annoyed having to make the exertion sufficient to write out a receipt for money paid him, although his financial position may be such as to make this payment a veritable godsend to him. Coupled with this aversion to exertion. there is often an incessant restlessness which is accentuated by mere restraint of it. One of my patients was a typical example of this form. He wore away the carpet beneath

his chair by this incessant movement, and this became so marked at meal-times as to compel him to leave the table long before he had finished his meal; yet it was next to impossible to get him to take a short walk in the grounds. The same patient was a good lawn-tennis player, and under this stimulus his symptoms fell from him like the dropping of a cloak, and to watch his alert movements, his keen interest and entire absence of fatigue during a tennis tournament, one could hardly credit him with anything but perfect health. Another peculiarity was his strong aversion to entering a cab or train or even to cross a quiet street without the greatest fear of some impending disaster. In others, concentration of mind is impossible even for a very short time, and if given a simple mental problem to solve will become hopelessly confused at once, with a resulting irritation at not being able to control this condition. Others again enthusiastically plunge into some work or scheme only to throw it up in disgust shortly afterwards—as soon as the stimulus of novelty has ceased to act. I had many opportunities of witnessing this form. Attached to my Norwood Sanatorium were beautiful and interesting grounds, and on a fine spring morning I have seen a number of patients plan to do some garden work.

The neurasthenics were the most enthusiastic of all, but after half an hour or so the only workers were those in whom the neurasthenic symptoms were least marked. Another class of neurasthenics are morbidly minded. They are quite convinced that they are the victims of this or that disease, and yet no organic trouble can be detected by the most careful examination. You no sooner convince them of the absence of one disease than they are convinced that it is another form from which they suffer. Others again suffer from vague pains in the head, body, or limbs. To the patients themselves these symptoms and pains are as real as if they existed. It is useless to deny their existence to the patients, because they cannot accept your bare word as against their experience. At the same time it is necessary to discourage them in their belief. How real these symptoms are to the sufferer only those who have experienced them know. To illustrate this, I may be permitted to add my personal testimony. For a period of from two to three years I was under a severe strain which culminated in an attack of nerve exhaustion, during which I suffered many of the above symptoms, and was finally compelled to take a three months' holiday, including an ocean trip. I returned hoping I was cured, but the holiday

was not long enough or had not the elements of cure in it, for I soon relapsed into the old condition. The struggle to do my duty under such conditions was heartbreaking, and finally I had to dispose of my sanatorium to its present owners and set about curing myself. Since recovering my health I find a fuller and deeper sympathy with those afflicted with the same disease.

I have dwelt upon this disease somewhat at length, because I know that many of these cases are cruelly treated by their friends through ignorance of the subject; and if readers of the above are in touch with such unfortunates, it may tend to lessen their contempt at their suffering and stimulate a desire to give them proper treatment.

One has only to look at the list of the sufferings of neurasthenics to realise how strongly alcohol would appeal to them as a temporary relief, and then if one adds to this the fact that it is in just such a condition of the nerves when alcohol acts most energetically, one can easily see how it is that these sufferers fall such easy victims to alcoholism. For years I was convinced that all alcoholics were neurasthenics, and although I have modified this opinion somewhat, it still holds good for a large majority of cases. The instability of their nerve force induces the taking

of alcohol which in turn increases the instability, this leading to excessive use of the stimulant with increased disturbance, and thus the vicious circle goes on, to the complete undoing of the victim.

General Debility as a Cause of Inebriety

Any lowering of the vital forces may lead to alcoholism. For instance, a medical man is temporarily overworked and deprived of sufficient rest. He knows perfectly well what he ought to do, but for various reasons determines to stick to his practice until the pressure lessens. To enable himself to do so he resorts to stimulants, just at a time when his system is least able to resist the effects, and the seeds of alcoholism are sown. The whole process is repeated again and again, until he finds himself in the toils. It is a common history to medical superintendents of inebriate homes, and as it is with the doctor so it is with the overworked business man—no time in this busy world of strenuous competition to take the necessary holiday. They do not for one moment intend to become inebriates, and always expect to pull themselves up sharply at the first sign of danger, but unfortunately for them the disease is an insidious one, and the

mischief is done before they are aware of it. Many patients date their inebriety from a period of convalescence from some illness. Wine or other alcoholic stimulant ordered by the attending physician is taken, and often the result is inebriety. How can it be otherwise when one considers how very sensitive the organism is to the poison at such a time? One of the most painful cases of inebriety I ever saw was of this nature, and in a teetotaller too. If our profession could only learn to order alcohol only when absolutely compelled to do so, instead of in the careless way it is now ordered, I am convinced there would be much less inebriety in the world, and much less suffering accredited to the profession. I find I have uttered this warning before, but it will bear repetition.

Syphilis as a Cause of Inebriety

Syphilis is a more frequent cause of inebriety than is generally supposed. Some of those who contract syphilis are highly sensitive men and women, with very exaggerated views of its probable effects. Their mental sufferings, whether they be from remorse, fear of discovery, or dread of future consequences, are acute, and induce a condition of nerves highly suitable to the growth

of alcoholism. Or, on the other hand, they may totally despair of ever regaining their health, and in sheer desperation resort to drink. I am quite convinced that the contraction of this disease by some has a most demoralising effect, breaking down the last barrier of self-respect, and leading to a consequent reckless plunge into all that is undesirable, indulging largely in spirits to enable them to temporarily forget their misery. The very company which they consort with only tends to encourage their drinking habits, in order to prey upon them so long as they have money to spend—then the end is not far off; the whole wretched story, beginning in one unfortunate indulgence—in some cases their very first offence.

The Mental Condition as a Cause of Inebriety

It is a well-known fact that the majority of inebriates are above the average in cleverness. Take a family of three or four sons; there may be nothing of note between them excepting that one is markedly more clever than the rest. In health, morals, and physique there is no difference, nor yet in their habits or surroundings. Yet if any one of them becomes a drunkard it is almost

always the most clever one of the lot. The very sensitiveness of his psychic functions is his weakness if he indulges at all. All pathologists writing on the subject of alcoholism agree that it is the most highly organised part of the system which first deteriorates in alcoholism, and it may be fairly assumed that it is this part which is first affected by the disease; consequently, if one member of a family has these higher centres more highly developed than the rest of the family, he will be more sensitive to the poison than they are. Whatever the reason, the fact stands that it is the clever one who most often contracts the disease.

But there is another class whose mental condition makes for alcoholism, and we have to travel very far down the scale to reach them; they may be truly termed the sots. In them the animal predominates over the intellectual; they are lustful in their eating, as well as in their drinking and passions. No restraining influences over their appetites whatever, they eat or drink till they can eat or drink no more, provided they can get it. They drink themselves drunk on all possible occasions, years before they become the subjects of a genuine craving for alcohol. They can do without it if it is not obtainable, without any of the torture undergone by the

real inebriate who is forced to abstain ; but once the real craving is established, they suffer like their more highly endowed fellow-victims. Of course one finds inebriates among all grades of mental condition, but these two classes stand out prominently by themselves. Their mental conditions are the extremes, and the causes of indulgence are equally distant one from the other.

While on this subject I may relate a peculiar form of mental condition found in one of my patients. He asked me the following question: "What will I do after returning home if any one asks me to have a drink?" There was nothing about him noticeably different from other men, and I did not take the question seriously at first, but he soon astonished me by telling me he was not joking but meant the question quite seriously. When I replied that it was quite easy to refuse a drink if one did not wish to take it, he could only say, "But, doctor, they will ask me to have a drink, and I don't see how I can refuse." He assured me that he did not wish to take it, neither did he want it, but was quite incapable of understanding how he was to refuse it, although he clearly understood the danger to himself in not doing so. The thing was a genuine worry to him, yet from some peculiarity of his mental condition he appeared to be totally unable to

see how he was to refuse. Another case of peculiar mental condition in an inebriate was that of a well-known journalist of Toronto. While undergoing treatment, two incidents occurred indicating an abnormal mental state. While gardening one day this patient asked me if he might help, as he was fond of gardening. I found he was not only very fond of it, but had a very special knowledge of roses. We were working and talking in a most pleasant manner when I mentioned the word " Methodist." Like a flash he was standing over me ready to strike with uplifted hoe and a face distorted with fury. To reach me he had crossed the flower-bed, and my appeal to him not to crush the roses instantly dissipated his fury and reduced him to tears. He then explained that the term " Methodist " always had this effect upon him—a fact which I saw corroborated later on. Now this man was noted for his kind-heartedness and gentle manners, while his articles for the press were full of solid common sense ; but I had no doubt in my own mind that his inebriety was due to some kink in his mental condition, and this I was able to verify later on.

The specialist meets with a great variety of mental conditions in the inebriate, and to attempt to enumerate them would mean a very large

volume, but there is one other class I will mention which is frequently met with, namely, those who get drunk with the idea of "getting even" with those with whom they have quarrelled or against whom they have some grievance, fancied or real. By some peculiar mental process they convince themselves that the injury is not to themselves but to others. I am not now referring to cases where the action of the drinker would affect some one interested in their habits, but to cases where their actions do not concern in the least those against whom they are directed. I have met a number of these cases.

Environment as a Cause of Inebriety

Environment not only acts as an exciting cause in inebriety, but also as a direct cause in some cases. As an exciting cause it is familiar to all.

There are many men who drink because their companions are drinking, or leave it alone because the others do so. They model their actions upon the action of those about them. If the others drink lightly, they are apparently quite content to do likewise; but if the others drink deeply they do the same. They do this not only in drinking but in every line of conduct. They are moral while their companions are, or the reverse.

They appear to live only to imitate others without any particular desire to do so. It is a matter of complete indifference to them personally what they do. They seem to have no individuality whatever. Now, if their more or less constant environment be that of deep drinkers, they sooner or later become inebriates, and their very lack of will-power makes them hopeless cases. Their only hope after a proper course of treatment is to place themselves in an environment of total abstinence, and remain there. As such an environment is almost impossible outside an inebriates home, they ought to reside there for long periods. There is another large class of men, who, while they are not mere imitators of their associates, and while they possess an individuality and will-power of their own, yet are strongly influenced by their environment, and will do violence to all their finer instincts if the influence of environment is sufficiently strong. They do not readily become inebriates, but a continuance for years in an adverse environment will drift them into inebriety. This is well illustrated in the following history of thirty hard-headed, keen business men of the city of Toronto. They were young men engaged in business, and the future was full of promise for them. They met at the same restaurant daily

to dine, and it was their custom to wish each other success in a glass of wine at the end of the meal. As their friendship grew with time, they became a circle unto themselves and met at more frequent intervals, often spending their evenings together and taking a whisky and soda with their pipes. At the end of five years there was no noticeable change in their habits; they were all still keen, hard-working business men who were making money, and drank with the same moderation. As time rolled by a change came over the scene. One by one they gradually began to indulge more freely and to meet more frequently, often at the expense of business. Finally came the end. Being asked to see one of them, I found him with but a few hours to live, and it was from him I obtained the above history. He concluded his remarks by telling me that of the thirty young men who had started life so hopefully, twenty-eight had died suddenly from drink, he would make the twenty-ninth, and the thirtieth was not likely to survive him by many months. His great trouble was that he and his companions had always scouted the idea of any danger arising from their social habits, and in consequence he could not tell how many young men had, through their example and emphatic statements, been led into a similar

course, the danger of which was now only too apparent. "Not one of us," he continued, "ever dreamed of becoming an inebriate, and consequently encouraged others to do as we were doing. If I could only recall my advice to those young men I would die with a much easier conscience." The last of the thirty died of delirium tremens a few months after. Not one of the circle reached fifty-five years of age. I afterwards met people who had known the members of this circle in former years, and they corroborated all his statements. No doubt this is a very exceptional history, but even so, it is a very striking example of how environment may cause inebriety. I knew some of these men personally, and am convinced that under ordinary circumstances their end would have been far different. Force of example and loyalty to each other no doubt played a prominent part in leading them into excesses which otherwise they would have resisted in time to avoid disaster. It is needless to add that their business suffered and failed like themselves, and the last of them became so poor before he died that he was unable to afford a fire on a cold winter's day. The other side of the picture is well illustrated by the following statement made by a friend of mine. He was visiting Canada a few years ago, and stayed at a leading

hotel in a large city. When at home here he regularly took a small Bass with his lunch, and for a day or two did the same abroad. Being a stranger in the country, it occurred to him to look and see what the Canadians drank at lunch. To his surprise he found himself the only one drinking an alcoholic beverage in a large dining-room full of people. He ceased to order his Bass, as he said he did not wish to make himself conspicuous. On inquiry, he was told that business men largely used the hotel to meet the representatives of wholesale houses from other parts, and that it was considered detrimental to their credit to be seen taking intoxicants; whether they did so secretly or not is another matter. The point is that the ordinary travelling public, of whom there was always a fair proportion present, felt the influence of this teetotal environment sufficiently to cause them to forego their usual beverage. One can hardly imagine a similar scene in the City of London, no matter how desirable it might be. Yet one may hope to some day see a similar scene even here in London, for the indications are that matters are improving in that direction. The following will illustrate this: A patient of mine, a broker, informed me that at one time he did not hesitate to call upon his customers with the smell or signs of drink on him, but that during

the last few years prior to his taking the treatment there was an increasing number of his customers who would at once have ceased to do business with him if they had noted the odour of drink about him, and he informed me that he cunningly saw all these early in the day, because he knew that sooner or later he would be taking his whisky and soda. He assured me that from his own personal knowledge there was a marked change in the habits of the City men during the last fifteen years. It is to be sincerely hoped that this improvement may rapidly grow to large dimensions, for any one acquainted with the present state of things knows what a large part environment plays there in the ruining of many promising careers through drink.

Even the class of women who in England think nothing of entering our public-houses for drink cease to do so on emigrating to Canada. Here it is a common practice; there no woman ever does it. And if one asks Canadian visitors to this country what strikes them most forcibly in our social customs, they almost invariably remark, "I cannot understand why women degrade themselves by entering public-houses." If the women of our lower classes lived in an environment similar to that of their class in Canada, they would cease to visit public-houses,

and thereby immensely lessen the risk of their becoming inebriates. It was not always so in Canada, but education and example have changed the whole question. Every child is taught in school the evils and dangers of alcoholic beverages, and grows up in an environment of the most favourable sort, with the result that a large proportion of the youth of the country do not know the taste of any form of alcohol, and look upon one who does indulge, even moderately, as already on the road to damnation. What drinking there is among the youth of Canada is largely confined to newcomers who have brought the habit with them from abroad, and many of these find the environment so strong that they soon become teetotallers. Without so doing it would be very difficult for them to obtain or hold positions in business. I am referring mainly to Ontario, the only province of which I have a personal knowledge. Whether the same holds good in the great North-West I cannot say, but I have been led to infer that it is so.

Worry and Trouble as a Cause of Inebriety

That worry and trouble is a cause of inebriety is apparent on the face of it. The old saying,

that "work seldom kills but worry often does," is more true to-day than ever. Also another old saying, "that the weak must go to the wall," is more evident now than in the former easy-going days. The strenuous competition necessary to obtain a living to-day is tearing our nerves to pieces. The husband not only suffers from this, but the wife and children. The wife finds it a greater strain to manage her household on the lessened income, and when both parents suffer, the offspring are bound to suffer also. Weakened will-power follows weakened nerve-force, and in a country where stimulants are as much in daily use as tea or coffee, the inroads of alcoholism are greater. Another factor is the increased number of those who find the struggle a hopeless one and give up in despair, and while a number of these end the matter by taking their lives, others from various motives refrain from such a drastic remedy and drown their sorrows in drink, or at least endeavour to do so, indifferent to the consequences of their folly. Our slums are eloquent of this state of affairs, but one does not need to go to the slums in order to meet with these conditions. Business men provide plenty of examples; the worry and nerve-strain of increasing competition is often met with freer indulgence in alcohol, and this being so among

the middle classes one cannot wonder at it among the lower classes, where the opportunities for success are on a much lower scale. Every medical man knows of such cases, and doctors themselves are far too often victims of the same trouble. Stock Exchange men, so I am informed, contribute an undue share of this class of inebriates. If this is true, one can readily understand how the nervous strain they are often subject to leads to an unusual use of stimulants, and its only too often resulting in inebriety. Knowing the effect of nerve-strain, one would not be surprised if one heard of cases of inebriety resulting from the all-night sittings of the late Parliament. More than one case can be recalled by me of inebriety resulting from the worry and strain of watching some dear one through a dangerous illness. The loss of sleep, anxiety, and nerve-strain are strong factors in the production of that condition of body and mind favourable to the contraction of inebriety. Cases are on record of sea-captains who have become inebriates in consequence of a prolonged strain in bringing their ships safely into harbour. The same thing is known of brave men, who, being responsible for the soldiers under them and who have been placed in hazardous places, where for a lengthened period their vigilance must not cease day or night, have been caught on the

rebound after being relieved. Even students have been known to become inebriates through breaking down when preparing for an exam. I well remember the advice given by one of the leading physicians when a student at the London Hospital. He said, "If you are working too hard and feel the strain, relax it by getting drunk." In the light of my present knowledge of drinking, I seriously question the wisdom of such advice. Relax the strain certainly, but relax it in any other way, for it is just in such a condition of the nerves when alcohol does most harm.

Social Customs as Causes of Inebriety

This is such a well-known cause of inebriety that one feels like apologising for enlarging upon it, yet every specialist in inebriety knows that the number of people who scout the idea of danger in the mere social use of stimulants is far larger than is generally supposed, and it is possible that some who read this book may be among the number, and may thereby see reason to change their views on this matter. I have already mentioned something of the social custom of Ontario, but it may astonish many at home here to learn that one may travel through the length of that beautiful and fertile province,

visiting house by house, whether in city or village, and not be offered a single glass of stimulant in ninety out of every hundred homes. This also applies equally to the farmhouses. This is not due to any lack of hospitality, for there are no more hospitable people anywhere. It is simply due to the fact that they neither use it nor keep it in the house, unless one here and there finds a little brandy locked up in view of sudden illness. It is simply the custom of the country. In contrast to this, what is our own custom?—practically the reverse. An English host or hostess could not understand hospitality without it, and a wine-cellar is as essential to all English houses of the well-to-do class as an ice-house is to a Canadian home. It is largely our custom to offer stimulants to a guest, no matter what time of the day or night he may visit our homes. The custom is unnecessary, unwise, and dangerous. It is unnecessary, because in those homes where it is never used the hospitality does not suffer from its absence. It is unwise, because of its example to children, and because, if there is a weak one in the family, the temptation is always present, and it is dangerous because, owing to the very force of the custom, many guests dislike to offend by refusing, and among them are often those who are already

fighting against its inroads, and the intended hospitality may start an attack of drinking and all its consequences. A host or hostess with the kindest intentions in the world may thus be indirectly the cause of much suffering and sorrow, and in a few cases even of murder.

It is unwise to assert that because you can take alcoholic beverages regularly without apparent harm, that all others can do the same, and yet those who honestly believe and emphatically assert such a principle form a very large proportion of our population. They forget the old teaching that "what is one man's meat is another man's poison." In this concise statement we find the whole truth of the danger of our social habits regarding stimulants. It is quite true that some of us can use stimulants moderately for a long lifetime without apparent harm, but, reversely, the same amount of stimulants daily will produce inebriety in others before they come of age, or at various ages upwards. One of my patients was a youth of seventeen, who was a confirmed inebriate at sixteen. He used stimulants in the same manner as the rest of the family, and, while none of them became excessive drinkers, yet he was seized one day with an uncontrollable appetite for alcohol, the gratifying of which, owing to his youth, nearly

killed him. We all know of families where the social custom produces inebriety in one member, while having no apparent effect on the others. Surely it is fair to assume that these victims would have escaped under different social customs. Years before pathology had shown us the steady destructive effects of daily drinking, even in moderate quantities, my experience of alcoholism had led me to the conclusion that the daily use of stimulants would make inebriates of every such user, providing they lived long enough. The facts all point in that direction. Life insurance companies prefer a teetotaller to the moderate drinker, other things being equal. The moderate drinker runs a greater risk of dying in certain illnesses than a teetotaller ; he does not stand a serious surgical operation so well ; he cannot withstand excessive cold or heat in the same way as a teetotaller, neither will he undergo the same strain or hardships as well as a non-user of stimulants. The cutting off of all alcohol during training for severe athletic tests shows clearly how its use prevents perfect vitality. If these things are so (and there is no question of their being facts), then it is evident that even very moderate indulgence has a deteriorating effect, and therefore the social custom of such moderate use of stimulants is

both unwise and dangerous. One often hears the remark, "Oh, I only take a little wine (or spirits or ale) daily!" One of the saddest cases I remember was that of a man who never exceeded two glasses of ale a day, never used wine or spirits, and only took his ale with his meals—one glass at lunch and another at dinner; yet he died of alcoholic dropsy. It is not the quantity taken so much as the effect on the individual, and I would like to warn those who are so confident of escaping the evil effects of alcohol simply because they are very moderate users, that no one can say what the effect of that small quantity will be in any one individual. The effect upon the individual will vary with the circumstances in which it is taken. The effect will be greater if taken on an empty stomach than if taken with food; greater if taken neat than diluted; greater to the sedentary clerk shut up indoors all day than to the bus or cab driver who lives in the open air; greater to the town dweller, though he be out of doors all day, than to the man out in the country air all day; and greater to the open-air dweller in the country if he resides in a valley than if he lives on the moors—all other things being equal. The reasons for these different effects of a similar quantity of a similar stimulant are well known

to medical men, but cannot be further detailed in a small work like this. As no medical man, let alone the moderate drinker himself, can know positively the precise effect of alcohol in any given case, it follows that there is only one sure way to avoid the evil effects of indulgence, and that is by abstaining altogether. No amount of apparently harmless effect upon others is a safe guide to the individual.

Before leaving the question of social custom as a cause of inebriety, I would like to offer a word of advice to certain of my readers—firstly as a medical man, and secondly as a specialist who has spent years exclusively in the treatment of inebriety.

To the hostess I would say, do not let your hospitality induce you to press upon or even offer stimulants to the reluctant guest. His dislike of refusing may induce him to accept that which sad experience has taught him to avoid. A friend should never feel offended because his friend refuses. A medical man should never prescribe alcoholic stimulants where any objection is made by either patient or family. A business man will be well advised if he ceases to expect every one with whom he does business to do it over a whisky-and-soda. An employer ought not to offer stimulants to his employee,

or a clerk to his fellow-clerk, or the servant of a railway company to another servant, or even a navvy to his mate. These are a few of the many instances where experience has shown that the intended kindness may be the beginning of untold misery. If we knew the exact effect in each case, the whole question would be very different; but we do not know, and therefore should learn from the sad experience of others not to allow our intended kindness to outweigh our discretion, or induce us to risk ruining the whole future of others.

Religious Observances as a Cause in Inebriety

There is one more cause of inebriety which I would like to mention, if only as a warning to those who would be the very last to injure their fellow-men knowingly, namely, the clergy. One naturally hesitates to associate a sacred rite like the Lord's Supper with inebriety, let alone mention it, yet I do so in the hope that what I am about to relate may lead to the substitution of unfermented for fermented wine in a larger number of churches than holds at the present time.

I am not qualified to discuss the religious

aspect of the question, nor is it within my province, but merely to point out the danger from a medical aspect and then leave it to the conscience of the clergy. I have been told by clergymen that the small sip of wine taken at Communion cannot possibly have any influence upon the drinking habits of the communicant. While this is undoubtedly true of the great majority of cases, it is not true of all. There are some individuals so sensitive to the action of wine that even such a small quantity as that taken at church runs through their veins like liquid fire, and arouses the demon within them as surely as a larger amount does in less sensitive users. This seems incredible, and I did not believe it myself at one time, but I now know it to be a fact. If we turn for a moment to another narcotic, namely, morphine, we find it on record that one injection of $\frac{1}{8}$th grain affected the patient to the extent of making him a morphine victim there and then. The same is known of cocaine. The disturbance to the system of one small dose has been so profound, that from then onwards the victims could not resist its use. I admit that these are very exceptional cases, but I am now writing about exceptional cases. The above drug cases were without any previous experience of the drugs, while the cases which are affected by the sacramental wine are

already fighting against the narcotic. It is also a fact that the very odour of fermented wine as the chalice is raised to the lips is known to have the most potent effect upon some, causing an instantaneous breakdown of all their will-power, and lighting up within them an uncontrollable desire to indulge; some of them have been known to do so there and then, causing them to take not a sip but a draught of the wine, while in one case known to me the communicant could not resist until he had drained the cup. It is on account of these exceptional cases that I hope to see the day when unfermented wine alone will be used. I have had some of these cases under my care, and if I had doubted their evidence, which I did not, I had a personal knowledge of these things in the sad death of a dear friend of mine. He had been a victim to alcoholism, but for two years had not touched a drop. His wife pressed him to attend a Communion Service one Sunday. She afterwards told me that he accompanied her with great reluctance, although he delighted in attending the ordinary services. At the time she did not suspect the reason of this reluctance, although she discovered it before his death. The effect of either the fumes of the wine or its taste was so marked as to lead him to an immediate outbreak of drinking, which ended in an attack of delirium

tremens. While delirious he evaded the attendant and leapt from an upper window into the street below, and was carried into the house in a dying condition. Well and happy one Sunday, dead the next!

When such sad cases are known to occur, surely we are justified in pleading for the use of only unfermented wines in all Communion Services. The fact that some have been known to attend Communion Services for the sake of the mouthful of wine is not of material consequence from a medical point of view, for these would take the wine wherever they could get it, and their habits do not necessarily concern the question of the use of one or the other sort of wine at Communion.

CHAPTER IV

FORMS OF INEBRIETY

In classifying inebriety, some writers give a long list, but I cannot see that any useful end is served by multiplying the divisions and subdivisions. On the contrary, I believe in as simple a division as possible, and find no difficulty in placing all alcoholic inebriates under one of the following five divisions:

1. The constant drinker.
2. The periodical drinker.
3. The dipsomaniac.
4. The voluntary drinker.
5. Mixed cases.

The Constant Drinker

In this division may be placed all those inebriates whose disease leads them into a daily indulgence in stimulants. They feel the need of the narcotic upon awakening each morning, and as the effect of each drink wears off during the

day they feel the need of another, and this condition persists throughout the days of the year. There is no period of the twelve months in which they are indifferent to alcohol, and if from any cause they are deprived of it they are conscious of a deficiency in their economy, the absence of something which they find necessary to enable them to act and feel normal. The term normal is not a correct one, for no inebriate can possibly be normal, but it is the only one which conveys a clear idea of how the inebriate feels when he has had just enough alcohol to steady his shaky hand, clear his confused brain, sharpen his appetite for food, and tone up his nerves generally. Deprive him of this necessary amount of alcohol, and he is like a piece of machinery working with all the connections loose—there is a jarring and jolting of the whole machine; but stoke him with the right amount of alcoholic fuel, and like the adjusted machine he steadies down, and if the working is not perfect at least gives a passable performance. There is no period during the whole year in which the victim is absolutely free from bondage. He may by the exercise of will-power or under the influence of some powerful motive cease to indulge for a longer or shorter time, but during the whole of this period of abstinence he is more or less conscious of what

we term craving, and although his general health may improve owing to more regular habits in eating and sleeping, coupled with the absence of the narcotic, yet he will tell you that there is a feeling of something wanting which he finds difficult or impossible to satisfy. This is not caused by the mere cessation of a daily habit, although that may in part account for his feelings ; it is due to something far more deeply rooted than habit, for it comes from the man's very nerve cells themselves. It is a real hunger of the cells, calling for the narcotic with which they have been supplied so regularly and so long that they have ceased to provide for themselves, and have learned to depend upon this constant supply. This craving is an expression of the sensory nerve cells. It is well known that the effect of coddling any part of the human system is to make that part less resistant against the very forces from which it has been screened. An unnecessary amount of clothing worn makes the wearer less resistant to cold ; living in overheated rooms causes an undue sensitiveness to draughts, etc. So it is with the alcoholic. He coddles his sensory nerves with the benumbing effects of alcohol, and thereby lessens the transmission to the brain centres of uncomfortable sensations from different parts of the body. He feels more comfortable

because he has cut the communication between the brain and the more or less uncomfortable parts beyond. By constant repetition of this, the sensory nerve cells become hypersensitive, and when there is a temporary withdrawal of the narcotic they are more sensitive to the usual stimuli, and he feels what he terms a craving. He terms it a craving because he knows that alcohol will stop it for a time, *i.e.* for so long as there is sufficient left in the system to benumb these cells.

In this division of alcoholics the craving is present whenever the supply is stopped. This craving is present in many men who not only are not aware of it themselves, but sincerely pity others in whom they recognise its presence. Take the large class of City men who do their business over a glass of wine or a whisky-and-soda. These drinks are repeated again and again during the day as a mere adjunct to doing business. It becomes a daily custom to them, just as eating their meals. After this has gone on for a few years, tell one of these men that he has become an inebriate and he indignantly protests, but ask him to test the matter by voluntarily abstaining for a month, and he is surprised by finding himself possessed of a craving for stimulants. This is the test I always apply in such cases. If

he does not miss the alcohol during the month of abstinence, and if he finds his nerves as steady without as with it, then he has not yet contracted the disease ; but if, as many do, he finds himself not up to the mark in various ways, he is already a victim and differs from the poor inebriate whom he so sincerely pities, or maybe condemns, only in degree—a degree which time and indulgence may rapidly obliterate. If any of the many who boast of their ability to take alcohol daily without harm, and who scorn the poor fool who cannot do the same, will try the simple test which I have mentioned, they may find a painful surprise in store for them.

That this craving once established lasts for years after a total abstention from all forms of alcoholic stimulants, is well illustrated by the following history of a man I knew. The daily indulgence in alcohol as an aid to business led to inebriety, but by the use of a powerful self-will and the aid of friends he succeeded in remaining teetotal for some five years. At this time he felt convinced that he had entirely outgrown all his former weakness for the stimulant. Being a journalist, he was asked to report upon the business of a large City firm, to do which it was necessary for him to enter some wine vaults. He did so without hesitation and without fear, but

had not been in them above five minutes when the fumes of alcohol awoke such a powerful craving within him that he rushed from the place like a madman, jumped into the first conveyance he could find for home, and when he reached his home rushed upstairs to his bedroom, locked the door and threw the key out of the window, and for three days dared not leave the house, for fear he would go straight to the nearest public-house and get drunk. Since then he has wisely avoided all likely places of temptation. This is no doubt an exceptional case, but we may justly infer from it that the craving once established may continue latent for years in those who have ceased to use the stimulant which produced it, and that the least indulgence on their part may lead to a lighting up of all the old trouble.

The second division is that of the Periodical Inebriate. The sufferers from this form differ from the last in one essential point, namely, the entire absence of any noticeable craving between the attacks. This absence of craving may be so marked as to amount to a strong dislike towards stimulants, and even towards those who regularly drink to excess. There is one very marked feature of this class of inebriates, namely, the great contrast between their mental condition during the attacks and the period between them. Men

and women who between the attacks are without reproach morally and religiously, become grossly immoral and profane during the attacks. They will also steal and lie with the utmost readiness, and when detected in any of these faults apparently are incapable of feeling shame. These are the extreme ones. There are many grades of contrast, but even in the lighter cases the difference is decidedly marked. Some who when sober are most fastidious in dress, most cleanly in habits, and most particular in selecting associates, become the reverse while drinking, and seek the company of the vilest and lowest, with whom they associate in the closest possible manner. To illustrate this contrast, I will mention three cases of which I have a personal knowledge. The first was that of a young man thirty years of age of the upper middle class. Educated in a good school and accustomed to associate with people of his own class, he had naturally good tastes and correct manners, and was most particular about his personal appearance and the status of those with whom he associated. He was one of the most difficult to please regarding his clothes of any man I ever met, and would change regularly several times a day. He strongly objected to anything but the best money could provide in everything; yet as soon as an

attack of drinking commenced, he made for one of the vilest and lowest of London slums, and as long as the attack lasted, unless forcibly removed by his friends, would live the life of those about him ; but as soon as the attack abated he returned home and resumed his normal character. Yet this man, who would sleep in the filthiest of beds, eat the dirtiest of food, and go unwashed and unshaved for days, would, when sober, object to anything short of immaculate linen and the daintiest of food, and I once heard him complain of having to walk the same streets as poor people. On one occasion I was about to lean on the parapet of the Embankment in order to watch the river life, when he stopped me with a look of horror on his face, saying, "Don't do that! Think of the filthy people who may have leaned there before you." Could any contrast be greater? The second case was that of a member of the legal profession, who by his superior talent had attained to a very high rank. Ordinarily a perfect gentleman, refined and courteous, during an outbreak of drinking he likewise sought the lowest company, became filthy and gross in his habits, and seemed to delight in all things vile. He was brought to me during one of his attacks, and on recovering was so humiliated to think that he was in the same building with other inebriates,

that he refused to leave his room for two weeks, and had all his meals served to him there, and during the remainder of his stay would associate only with myself and assistant. On leaving, he begged of me not to let any one know his real name or position. It may interest my readers to learn that he never touched stimulants again, and shortly after returning home he wrote me a most kind letter apologising for his undue pride while with me, and in proof of the sincere change in him he nobly worked amongst the fallen, sending some sixty cases for treatment as a result of these efforts. The third case was that of a son of a member of the Upper House who was noted for his fastidiousness regarding dress, his perfect manners, and the select companions with whom he associated. Yet I saw this man cuddling a frowsy tramp, whose filthy face he repeatedly kissed. After the attack I asked him how it was possible for one so particular as himself to act so. He indignantly denied that the thing was possible, and when I referred him to a number of witnesses of his act he was still unconvinced, and maintained that it was a conspiracy of lies. I am quite convinced that these men or women are quite unconscious of their surroundings at the time, or that some trick of memory mercifully obliterates all traces of this portion of their lives. When we

know of these extreme cases we are not unprepared for the larger numbers of less horrifying contrasts, but even in the mildest cases we find a marked change in their behaviour to those about them. These cases always show some sign of the approaching storm, and those living in daily contact with them soon learn to know when to expect an outbreak. The appetite falls off, signs of restlessness and irritability manifest themselves, and when engaged in business they slacken in attention to same. Realising their danger, many of them fight, and fight hard, to avoid the inevitable, until their resistance wears out and they are swept off their feet. They are like a man who, while swimming calmly in a placid stream, finds himself approaching a whirlpool; realising his position, he struggles to avoid the danger, but the current grows stronger each minute, while his power of resistance grows less with his struggles, and shortly he is swept into the vortex, to be later on cast ashore, a battered wreck. These victims are often blamed by ignorant friends for allowing themselves to be overcome. All I can say to these thoughtless judges of their fellow-men is, God grant that they may never have to undergo the heroic but hopeless struggles of those whom they so little understand and so lightly condemn. One constantly reads of heroic struggles in other

conditions of life, but I know of none so deserving of our admiration as the struggles of a strong man against this periodic demon. I well remember witnessing such a struggle in a good-living man possessed of an iron will, and I shall never forget it. No doubt the victim had been fighting for days, but it was the very height of it which I saw. He was pacing the floor like a lion newly caged, every muscle strained to its utmost, teeth clenched rigidly, and hands clasped behind with the nails cutting into the flesh, while beads of perspiration stood upon his brow. Such a strain would soon wear down the strongest and most stubborn resistance. This heroic struggle would be worthy of all praise if there was a chance of victory—how much more so when the victim knows it to be hopeless, yet fights to the very death from a sheer sense of duty to dear ones. I feel sure that the same man if placed in some trying position in battle would cover himself with renown; consequently I become somewhat impatient with those who, knowing nothing of such heroism and incapable of a tithe of such manliness, preach to such from their lofty pinnacle of self-righteousness. They are not always even Pecksniffs or other forms of human humbugs, but even if honest in their ignorance it would be better if they practised charity before criticism. I have

emphasised this point strongly because I have known many cases where the sufferer has been so disheartened by the constant reproaches of a wife or friends that he has ceased to struggle further, and has rapidly sunk into a hopeless condition. That I believe that some of these cases of periodical inebriety have no memory of their drinking, I have already stated, and I quote the following history of one of my patients in support of this belief. His practice was to suddenly disappear from his business and engage a back bedroom in a small inn in a low quarter of the City. Here he would lie in bed drinking bottle after bottle of whisky until the attack wore off. When the innkeeper was asked why he supplied him, he replied that the patient was apparently aware of all he was doing, would talk intelligently of recent events, and did not appear to get very intoxicated, and consequently he saw no reason for refusing to supply him. He would read the newspapers, write letters, and talk coherently and intelligently with any of the inmates of the inn who cared to visit him. The landlord's statements were corroborated by those who so visited and talked with him. Yet this man assured me most solemnly that from the moment of his leaving his business until his attacks ended he remembered absolutely nothing, nor was he ever

able to recall one single incident of these periods. The last attack he had before taking treatment at my sanatorium was commenced as follows: He was keenly interested in a business scheme which necessitated daily interviews with his solicitor, who informed me that up to the very moment of his disappearance he showed no signs of the approaching attack. They were as usual discussing the details of the scheme when the patient said, "Kindly excuse me for five minutes. I must see a man a few doors away; I will return in a few minutes." He did not return, and was not found for three weeks. He had meantime gone straight away to an inn, as in previous attacks. The attack here would appear to be devoid of premonitory symptoms, but I am of the opinion that they were present, but were concealed from the eyes of the unsuspecting solicitor by the patient's excited interest in the scheme, for his wife had noticed the usual change. My faith in the man's statement that he was oblivious to all that passed during the period which elapsed between the time he left the solicitor and his rescue by a friend was strengthened by his behaviour while at the sanatorium. He arrived quite sober, and during his first interview with me asked if there was anything he could do to help the treatment beyond the usual instructions

which I had given him. I said, "Don't smoke too much."

"I won't smoke a single pipe while here."

"Don't go into the town during the first week."

"I won't leave the grounds while here."

"Rest the first week, then take all the exercise out of doors you can, short of fatigue."

He said, "Trust me, doctor, to faithfully carry out all your instructions, for I must get cured."

He, although a heavy smoker, never touched tobacco, never left the grounds, and faithfully did all he promised during the six weeks of his stay. One day, when something unusual was attracting the other patients to the harbour, he was exercising in the grounds, and I said, "Why don't you go with the rest and see the boat races?" "No, doctor; this is a life-and-death affair with me, and I am determined to do my utmost to get cured." He succeeded.

I am further strengthened in my belief that memory of these periods may be entirely obliterated in some by two cases in the sanatorium. One was commencing an attack on arrival, but on the next day the treatment had made it impossible to keep any whisky on his stomach, yet he persistently asked for it. Now I have always made it a rule to give a patient a drink if he wants it, because no treatment can be effective if the

slightest desire for stimulants remains. I ordered the attendant to see that he had a drink as often as he wished for it, fully expecting that when he found he could not drink it he would desist, but in this I was mistaken; and when I asked him why he persisted seeing that even the odour of it made him vomit, he replied, "I am determined to make it stay down." This went on for a week, during which time I often sat at his bedside conversing with him on all sorts of subjects, and finding nothing abnormal about his conversation. I was puzzled at his persistency regarding the drink. At the end of the week he appeared one morning at breakfast, and when treating him I said, "Well, have you given up the attempt to swallow that glass of whisky?" He stared at me in astonishment, asking, "What drink?" I related the week's experience. "But how can that be, doctor, seeing I only arrived here last night?" "You mean a week last night," I said; and although he knew perfectly the date of his entry he insisted that he had not been twenty-four hours with me. I had to produce the daily papers to convince him, and then he was not satisfied until every patient in the place had corroborated the date and the fact that he had spent a week in bed. He assured me that he was never more astonished

in his life when he was obliged to believe our statements. He apparently remembered nothing of the whole week. I had another similar case to the above, differing only in minor details.

There is nothing during this period in the appearance or conversation to indicate that these men do not know what they are doing and talking about, and I am prepared to believe that they do so at the time but have all memory of it obliterated at the moment of recovery. This being admitted, one is prepared to find partial lapses of memory in minor cases which would account largely for many apparently contradictory facts occurring during these attacks.

Another peculiar feature of these periodical cases is the curious delusion the patient has regarding his cessation from drink when the attack has ceased. He invariably informs those attending him that he has decided to stop drinking and reform, and quite believes that his resolution is alone responsible for the refusal of further stimulants. As a matter of fact, his resolution plays a very small part in most cases. He has done two things by his indulgence, namely, saturated his system with alcohol, and inflamed his stomach to such a degree that he is nauseated on any further attempt to drink. These are two very potent factors in the case.

His craving has ceased and all alcoholic beverages have become repugnant to him; consequently, having lost all desire for it and finding himself unable to take it, he arrogates to himself the virtuous resolve to reform. That he really believes that to him belongs all the credit of the resolve to reform, I am quite prepared to accept; at the same time, to offended nature belongs the credit, if any exists.

Before leaving this class, I will mention a question which is often put to the medical attendant, namely, Why is it that the periodical inebriate is so free from all craving, which in some cases amounts to an actual disgust for alcohol, during the intervals of his attacks? One can only theorise. and all theories are unsatisfactory, but here, as in other well-known diseases, one is obliged to, until more perfect knowledge of the subject gives us the real cause. The theory which I have formed, and which I give for what it is worth, is this, that in some alcohol is capable of being stored up in the system, possibly in some allotropic form or chemical combination during the attack, that this form or combination gradually breaks down during the interval in sufficient quantity to satisfy the weakened craving for it, and upon its exhaustion the symptoms of a fresh attack appear, and the

process is repeated. I frankly admit that there is no proof of any real value in support of this theory, but it accounts for some of the special features of periodical drinkers as nothing else, so far as I know, does. It has its weak points, undoubtedly; so have many other readily accepted theories in pathology. In support of it one might refer to the well-known fact that the human system stores up other forms of food, and gradually breaks them down to meet the needs of the body, as, for instance, fat and glycogen; that some substances are known to assume allotropic forms under certain conditions, and that our knowledge of the chemistry of the organism is not yet so perfectly understood as to enable us to say that alcohol may not do the same. It would account for the absence of a craving for alcohol during the intervals. And lastly, it is a well-known fact that any unusual strain upon the vital forces during the interval lessens that interval; and it may well be that owing to the strain the supply is more rapidly exhausted in a similar way that a man loses some of his stored fat during such a strain. The theory would also help to explain why these periods regularly get shorter and shorter, by assuming that the power to store the excess of alcohol lessens with time, or that the demand

increases, or possibly both play a part. The theory put forward by some that it is a temporary insanity, I am not able to accept in view of the facts. I leave that for a quite different class of inebriety, which I will describe later on.

Leaving the theory alone, let us return to facts. The periodical drinker commences with short attacks and long intervals, but the almost invariable rule is for the attacks to increase in length or severity and the intervals to shorten, till from one attack every six or twelve months they become more numerous yearly, until they practically verge into steady drinking. Some take longer, some shorter time, but whatever the rate of progress, the result is the same in most cases; and although the patient may not actually drink daily, he finds a time, if he survives long enough, when, like the chronic inebriate, his craving is always present if not satisfied. I have heard men boast that they only go on the drink once or twice a year. To all such I would say, Fight it while you may, lest a day comes when you will find that the once a year becomes four or five times a year.

The Dipsomaniac

The term dipsomaniac is often loosely applied to any form of excessive drinking, but I think

it would be better to limit its use to those cases when outbreaks are marked by mental excitement of a maniacal kind. If we do this I am convinced we shall find less confusion in our classification than by the present use of the term. We will also find this class is distinctive in its leading characteristics from the others. I do not see that much is to be gained by subdividing the class into further divisions, such as pseudo-dipsomaniac, etc. The simpler the clasification of inebriates the better, for if we give way to this tendency we will soon find a hopeless list of confusing terms which neither aids our treatment nor our understanding of the disease. A few years ago it was the aim of every dermatologist to add a new name to the already confusing list of skin diseases, with the result of making the confusion worse confounded and the treatment more difficult ; so much so, indeed, that in very defence of the science leading dermatologists were compelled to simplify the list. If we give way to that sort of thing we shall have divisions without number, and this will be followed by an effort to fit a certain remedy to each division, which will hopelessly confuse matters. I am therefore convinced that the simpler the clasification the better, providing we cover all cases. The wiser course would be to limit the term

dipsomaniac to those cases which are devoid of a craving for alcohol during the interval between the attacks, and are marked by a pronounced mania during attacks.

Under the above definition the number of cases of dipsomania form but a small proportion of inebriates, but the most dangerous and difficult ones to treat. With regard to the latter I shall speak later on, but I would like to utter a word of warning here about the danger to those who come in contact with these cases. The mania may take a suicidal or homicidal turn, and it may come at a moment when least expected; therefore none of these cases should be left in charge of friends or ordinary nurses, but fully trained and experienced attendants should always be provided. On three separate occasions I came within an ace of losing my life at the hands of a dipsomaniac patient. On one of these the patient was noisy and excited, but had not shown any signs of danger to those about him. While one attendant was busy placing extra protection to the window, the other stepped into an adjoining room to get the patient's medicine. I had just turned to leave the room, when the patient silently left his bed, glided swiftly across the room, seized the hatchet which the attendant had laid aside for the moment, and was on the

point of braining me from behind when the returning attendant shouted a warning. The point I would like to emphasise is this—two trained and experienced attendants were in charge when, without any warning whatever, and within a single moment, I would have lost my life, if the second attendant had returned an instant later. On both the other occasions the impulse was just as sudden and the escape as miraculous. When one thinks that such patients are often placed in charge of a young female nurse or a friend or relative, one feels justified in emphasising the warning as to the danger.

Whatever may constitute a dipsomaniac, I cannot help coming to the conclusion that every dipsomaniac is insane, but the insanity is not sufficiently marked during the intervals to attract attention, and is only apparent when the patient is excited by alcohol. If these patients are carefully studied during their periods of sobriety, they all show some marked peculiarities of character, but which are not sufficient to differentiate them from a large class of persons who are not considered insane. I was once asked by the wife of a dipsomaniac if her husband was insane. I asked if he had been drinking again ; she said "No," but he compelled her to do the most abominable and unnatural things in private,

and she felt sure he must be insane. Now I studied this case for some time without finding any very marked peculiarities of character, as he cunningly covered up all traces of his insanity from outsiders. He finally committed suicide, and I subsequently ascertained that his father had died in a lunatic asylum. It is very difficult to obtain a clear history of these patients, as the friends naturally desire to conceal all traces of insanity in the family, but I am convinced that if a full history were obtained in all cases we should find evidence of hereditary insanity in the great majority of patients. Therefore these patients are a distinct class, and require different treatment from all others.

Voluntary Drinkers

The fourth class of inebriates are, strictly speaking, not medical cases at all. They are the voluntary drinkers, and for a certain period in their lives are not afflicted by any craving for alcohol. In the beginning it is not the physical but the moral side of them which is at fault. Nevertheless, as they often eventually become inebriates, it is necessary to consider them from a medical point of view.

The distinguishing point about them is that

they have no physical craving for alcohol, and drink from mere caprice. If asked to join a drinking party they will do so, and become intoxicated for the mere fun of the thing. They drink in order to get drunk either for the pleasure it gives them or to forget their trouble and sorrow, and when the occasion passes which caused them to drink they sober up entirely free from any physical craving, and will not drink again until some special circumstance induces them to do so. They can be drunk or sober at will, provided they have the means to pay for it. Their drinking is a mere vice, and it is the confusion of this class of drinkers with the genuine inebriates that has caused so much misunderstanding of the whole question. It is necessary to make this point quite clear, namely, that there are two classes of drinkers—those who get drunk from mere vice, and those who do so from a need to satisfy a physical craving. Let this be clearly understood, and the great controversy which has raged for ages and which is still raging will cease, and the preacher, the temperance lecturer, the social reformer, and the laity generally will cease to hold diverging views, while the genuine inebriate will get more consideration and suffer less undeserved persecution by the self-righteous, uncharitable critics who

pass judgment upon them, in their ignorance. The whole ground of treatment would also be placed upon a clear and rational basis. Millions of money which is now wasted in misguided efforts would be spent in a useful direction. It is only fair to add that the laity are not altogether to blame in this matter, for until recently only a small proportion of the medical profession understood the true nature of inebriety; indeed, one can go further, and say that even to-day doctors are to be found who are still ignorant concerning this question, and consequently are misleading the laity. Magistrates, from their large experience of such cases, are far better informed upon the subject than many of our profession. Every specialist in inebriety knows that immeasurable misery and harm has been done, and is being done, through the misunderstanding of the facts. When we come to consider the question of treatment, I will show how this misunderstanding works a further immeasurable harm.

Drug Inebriety

We now come to the consideration of the question of inebriety caused by other forms of drugs than alcohol. This comprises a long list, but the most important is opium, or some of its

derivatives or preparations, namely, morphine, laudanum, paregoric, heroin. These differ considerably in their effect upon the system, and to understand them one is obliged to study the effects of each form of the drug. The opium eater or smoker is as common in the East as the alcohol inebriate in the West, and it is a well-known fact that the effect of opium-smoking in the East is as different as possible from its effect in the West; that is, generally speaking, of course, for there are exceptions to this rule as to all others. I think it is Sir Lauder Brunton who mentions in his excellent book *The Action of Medicines* the following: "The Oriental uses opium in much the same way as we use alcohol," and goes on to say that, "If we transport the Oriental to the West and substitute alcohol for opium, he goes all to pieces. Similarly, if we reverse the action and send the Westerner to the East, substituting opium for alcohol, he likewise goes all to pieces. Yet each in his own land may be what we term a moderate smoker (or drinker) respectively." This is probably due to a certain tolerance acquired through generations of users in each case. However this may be, the fact remains that the two drugs have entirely different effects upon different races. The opium-smoker in the East may

smoke his opium for years with as little harm as the moderate drinker here may receive from his alcohol. I do not mean to say that all opium-smokers can do so, but a large proportion do, while the remainder go to pieces just as a certain proportion of moderate users of alcohol do in this country.

Let us now consider the effect upon Westerners who use opium as opium. The habit may be contracted quite innocently, or it may be deliberately acquired; generally the latter. A patient of mine, a medical man, contracted the habit through taking laudanum for diarrhœa; another, through a nurse administering paregoric to relieve abdominal pains; another, through the taking of opium pills prescribed by her doctor; others from various similar reasons. They all found the effect fascinating; they ate better, slept sounder, were freed from their aches and pains; their worries vanished, and life took on a roseate hue which was very enjoyable. But later on a change came over the scene. The drug ceased to produce these pleasant sensations, and a train of symptoms set in quite the reverse of those which I have mentioned. To meet these they took increasing quantities of the drug, until a time arrived when even these large doses merely sufficed to temporarily abate their great misery;

and if from any cause the supply failed they suffered excruciating pains and distress, while their bodily health steadily declined. Their moral decay is very striking. They will lie and steal in the most unblushing way. They also become very cunning in their efforts to obtain or secrete their supply of the drug or in order to cover up their failing. It is often this very lapse of morals which first directs the attention of their friends to the habit, for they invariably use every means known to them to prevent their friends knowing of their weakness. In this they may be successful for some time at first, provided they are not under the eye of some one accustomed to such cases; but sooner or later the exposure must come, and the hideous truth is flashed upon their friends, and the struggle for reclamation follows.

But opium users in this part of the world are few in comparison to those who are victims of the morphine habit, and it is this latter form which the medical man usually meets with. Here we have to deal with a more intractable form of disease. All that has been said of the opium taker is true of the morphine user, but in a greatly exaggerated degree. Morphine is an alkaloid of opium, but the latter contains other alkaloids which have a modifying effect. Again, opium is

swallowed and is absorbed from the stomach slowly, while morphine is generally injected directly into the tissues and quickly absorbed by the circulation, and its effect is rapid and intense. These two factors seem to me to account for the difference to the users of the two drugs. The opium taker is much easier to control and decidedly much the easier to treat of the two. The morphine habit is much more readily acquired than the opium habit. This is no doubt due to its rapid and intense action when injected, and its rapid absorption when tabloids are placed in the mouth. The morphine fiend no longer requires a syringe, for he has discovered that the placing of a tabloid of the drug under the tongue will answer nearly as well owing to its rapid absorption. While no one acquires the habit of taking opium rapidly, cases are on record of the very rapid acquisition of the morphine habit, and I have seen one case where all the evidence points to the astonishing fact that the habit was established by the first injection of morphine. I may say that I sifted the evidence given by the friends most carefully, inquiring minutely into the previous history of the patient, but elucidating no evidence of an earlier use of the drug ; in fact, the whole evidence was directly opposed to the possibility of any knowledge or use of the drug

prior to the injection mentioned. This is a very important matter from a medical point of view, warning the physician that in the use of this most useful remedy he cannot exercise too much caution. The known practice of allowing the nurse to administer the drug is extremely dangerous in many cases, and should only be permitted where it is impossible for the medical attendant to do so himself. If one injection of the drug is sufficient to set up a craving in one individual, it follows that two, three, or four injections may develop the craving in others; and as the physician cannot possibly know beforehand what the effect of the drug will be in any individual case, the need for caution in each case is evident. If I have laboured this point somewhat, it is owing to my having seen so many cases of the morphine habit due entirely to the carelessness of the physician in administering the drug. If the case of the opium taker is bad, that of the morphine user is still worse, for the suffering of the latter is greatly intensified. What this suffering is may be inferred from the great precautions taken by the victim in order to prevent a failure in his supply of the drug, and the cunning displayed in secreting the same. This is best illustrated by a few instances occurring in my own patients.

A medical man brought his wife to me for

treatment for the morphine habit. He assured me that his wife had not brought any of the drug with her. I asked him if he had carefully examined her since her arrival. He replied that he had, and was still confident that she had none of the drug. I then made a personal examination, and, having satisfied myself that none of the drug was concealed in the usual places, such as the hair, undergarments, etc. etc., I noticed the patient was wearing a fur coat. As these coats are always padded, it suggested a possible hiding-place. I therefore placed the coat flat upon a table and passed my hands carefully over it, pressing each part between the hand and the table. I was rewarded by finding a dozen tubes of morphine tabloids carefully concealed in the wadding of the coat, the seams having been opened and then sewn up again. Another case was that of a doctor, who, having assured me that he had come with a firm determination to get rid of his failing, and who delivered into my care a supply of the drug and two syringes, so far convinced me of his sincerity that I omitted a personal examination, but, knowing how unreliable all such cases are, I decided to carefully note every symptom. During the first twenty-four hours I was convinced that he was taking more of the drug than I was allowing him to

have. Having convinced myself of this, I watched most carefully, but failed for several days to discover any source of supply. A very slight incident directed my attention to the method used in this case. Being required to write a short note, he asked permission to take it to his room for the purpose, as he preferred using his own fountain pen to any other, although there were several varieties of pens upon the desk at his disposal. This aroused my curiosity, and I decided to investigate the question of that particular pen on the first occasion. It turned out to be, as I had suspected, a complete syringe and reservoir for morphine tabloids. This being removed, his further supply ceased. Another case was one which puzzled me for a long time as to the source of supply. I had carefully searched every inch of clothing and room without coming across it, and it was only by accident that it was discovered, although I knew the patient to be taking more than I allowed. I was standing in the garden concealed by some shrubbery when I heard a window open, and, looking to see what it meant, I was surprised by noting a hand carefully pass out of the only partially opened window and feel about underneath the window-sill. As I knew that this room belonged to a morphine patient, I at once suspected what it meant, and I

found there a cunningly secreted syringe and supply of the drug. Another case baffled me altogether, as some will do, no matter how great one's experience may be. Knowing this patient to be using more than the allowance of the drug, and failing utterly to get any trace of his source of supply, I refused to treat him further. The patient then volunteered to show me how he had hidden his supply of the drug. He had brought with him a syringe and a quantity of the drug made into a concentrated solution. This he carefully sprayed on the wall of his room and allowed to dry. The colour was exactly that of the wall. When he wished for a dose of the drug he merely scraped a sufficient quantity from the wall and used it.

But necessary as it is to discover their hidden source of supply, it is more important to be able to tell when patients are taking the drug in addition to the allowance made them, and when we discuss the treatment I will describe a simple method by which one can always tell when they are doing so.

There is another derivative of opium which has lately come into use, and which is a more dangerous drug than morphine, although it is generally believed to be much less so ; I refer to *Heroin*. It is chiefly used in cough mixtures as a sedative.

I think the most pitiful case of drug-taking I ever saw was that of a user of this drug. He was travelling in New Zealand, and, being about to go into the hills where he would be unable to obtain his usual supply of morphine, he applied to a local medical man to ask his advice. Apparently not knowing the dangerous nature of heroin, the doctor gave him a supply of this drug, with instructions how to use it, telling him that it would be much less harmful than the morphine, and would completely take its place. On returning to civilisation some weeks later, he attempted to return to the use of morphine, but found that it would not replace the heroin, and he was compelled to continue using this drug. When he came to the Norwood Sanatorium for treatment he was in a pitiful condition. His mental faculties were apparently unaffected, but he was unable to walk without the aid of two sticks and then only with the greatest of difficulty, a slow, dragging, semi-paralysed step. He looked like a man who was suffering from some spinal complaint. If the quantity of drug was reduced below a certain point his sufferings were intense, and nothing could be found that would relieve them, excepting the heroin itself. During my experience in the treatment of such cases of drug-taking I witnessed some very piteous sights,

but never in my life have I come across anything to compare with the condition of this unfortunate man. He was intensely anxious to be relieved of the curse of this drug, but the ordinary treatment for morphine failed utterly to give him any relief, and I was unable to find anything that would satisfactorily lessen the use of the drug. At the time I was not aware of the virtues of combretum sundriacum. He only remained some ten or twelve days, and ever since I have known of the virtues of the Chinese herb I have wished for an opportunity of testing it in these cases, as I believe it would be decidedly helpful in treating them.

People who take sedative cough mixtures containing this drug run far more risk of contracting the habit than they are aware of. I had a personal experience of this two years ago when on a holiday in Cornwall. I had taken a supply of a preparation of this nature, as at the time I had an attack of chronic bronchitis, the cough of which was very troublesome and prevented my proper rest. I found a dose or two of the mixture on retiring gave me a fairly good night's rest. Contracting a slight cold, the cough became very much worse, and that evening I was compelled to take several doses of the mixture in order to relieve it. The next day I felt strangely elated—felt as if years of age had been with-

drawn. I can only compare the feeling with that of a man of fifty years of age suddenly finding himself back to youthfulness. All the distressing symptoms of the complaint which compelled me to take the holiday vanished, and were replaced by a buoyancy and feeling of well-being such as is seldom experienced outside youthful years. At first I thought this was due to the very bracing sea air on the Cornish coast at that time of the year, but, being some hours absent from my rooms, the effect of the cough mixture wore off and was succeeded by a feeling of great depression and lassitude. Upon returning to my quarters and taking another dose of the mixture, the buoyant feelings returned. I became suspicious of their source; I decided not to use the cough mixture again for twenty-four hours, and to note the effect. Apparently the reaction was very great, for I felt extremely ill and uncomfortable, my legs being very heavy, was disinclined for any exertion whatever, a feeling of utter prostration replacing the buoyancy of the previous hours. I determined to make another test of the mixture, and took one or two doses more. The result was almost immediate; the same feeling of buoyancy and youthfulness returning. I then decided that the heroin in the mixture was the cause of this. It required a considerable amount

of self-will to refuse to use it again. It is impossible to describe in words the fascinating effect it has upon one and the terrible reaction that follows its withdrawal. The amount of heroin in each teaspoonful of the preparation was $\frac{1}{24}$th of a grain of the hydrochloride, and this is the usual dose prescribed in cough mixture. I mention this danger in connection with the previous case in order to emphasise the fact that a cough mixture of this nature should never be taken without a medical man's supervision. Personally, I consider the drug not only more dangerous, but far more fascinating than morphine.

Laudanum Using

I have already remarked that opium in the form of the gum is used in the East in very much the same way that alcohol is used in the West, and I have shown how it affects the different races. In this country very little laudanum is used in the form of drug-taking; at least it has not been my experience to come across many cases of the kind. The habit is generally acquired through laudanum being prescribed by a physician, and being continued by the patient long after it was the intention of the doctor that it should be. One of my recent patients was a case of

this sort. On inquiring from her how she came to get accustomed to the drug, she showed me a prescription which had been given her many years before. It was of such a nature that there was no doubt in my mind that the physician who wrote it did not intend it to be repeated; but the patient had been taking this during all these years. I asked her if the doctor who prescribed the medicine knew that she was having the prescription repeated, and she candidly told me that she had never informed him of that fact. The habit is also sometimes acquired by using homely remedies for mild complaints, especially by people who have lived abroad in tropical countries and have found trouble in that direction since returning home. It is quite true, as has been stated by several authorities, that these laudanum takers use the drug for a considerable time in many cases without apparently any great harm, although eventually they reach a stage akin to that of the morphine user. I have met with patients who take a certain quantity of opium daily, and have done so for many years, and who seem to be in more or less perfect health. Certainly even after years of the use of the drug they enjoyed a good average health. One patient in particular appeared to thrive upon it; instead of the usual sallow or earthen colour

of many drug takers, he had a particularly fresh complexion, although he was using the equivalent of 4 grains of opium every twenty-four hours, and had been doing so for at least ten or twelve years. While this is true in general of those who use laudanum, many cases rapidly deteriorate under its use, and the habit becomes a very similar one to that of morphine taking. It is the custom of a number of physicians to prescribe small doses of laudanum daily in order to stimulate the peripheral circulation in those who suffer from cold extremities. On asking one of our eminent specialists who was fond of prescribing this drug in such cases, if he had ever known any of his patients to form the drug habit in these circumstances, he told me that although he had been prescribing it regularly to a number of patients during the last thirty years, he had never yet known any of them succumb to its fascination, when prescribed in small doses of the tincture of opium. These cases of laudanum taking are very easily cured in comparison with the morphine patients. Their sufferings when in an advanced stage are very much less.

Paregoric, or the ordinary compound camphor tincture of the British Pharmacopœia, is another form of drug which may induce a habit. One of the most remarkable cases of this sort I saw

was that of a woman of middle age, for whom the drug had been prescribed by a nurse in order to reduce the abdominal pains occurring subsequent to child-birth. Finding the effect agreeable in many ways, she continued its use until she found that she could not give it up. When she came to me for treatment she was taking 40 oz. of the paregoric every twenty-four hours. The effect upon her was of a peculiar nature. She was of an almost waxen colour, had grown very stout, and while taking the drug could eat and sleep fairly normally. Yet life was a great burden to her in many ways. She had used the drug for several years when I first saw her, and for the last four or five of these the normal female functions had ceased to act, although she was less than thirty-five years of age. On withdrawing the drug and restoring her health, she became quite normal in every respect, and apparently was not any the worse for the habit.

The Chlorodyne Habit

Another habit of importance connected with opium is that of chlorodyne using. I have seen only a few of these cases, and do not think that they are very numerous, or one would be likely to hear more of them. One can readily

understand how the taking of chlorodyne for the relief of pain might establish a habit, when one considers that it contains a considerable proportion of morphine in each dose. The fact that it has to be used or measured out in drops may help to prevent the spread of the habit to a great extent, as the laity are generally very cautious in taking excessive doses of medicines that are measured in drops. This is fortunate, for chlorodyne is a very fascinating preparation, the chloroform which it contains giving it a very pleasant taste. I have known children become very fond of the chlorodyne lozenge, which is sold so abundantly as a cough remedy during the winter season. I have also known people who told me that the same lozenge had a very fascinating effect upon them. I am not quite certain that they all contain morphine, but those that are made according to the standard formula must do so, and it is probably these that provide this fascination. I invariably warn those I meet against the indiscriminate use of them. It is only a step from the chlorodyne lozenge to chlorodyne itself, and one does occasionally meet with slaves of the chlorodyne habit. It is practically neither more nor less than the morphine habit, but fortunately those accustomed to taking it in the form of chlorodyne do not know this,

or they would buy the plain alkaloid and use a syringe. The very expense of the preparation has a tendency to curtail the habit as much as possible. One patient informed me that if she had the means she would use much larger quantities of the chlorodyne than she was able to do. It was only when her sufferings became unbearable that she was obliged to find the means of obtaining another supply.

Treatment of course will be discussed later on, but it is practically the same as that for morphine.

The Chloral Habit

It is mostly women who become addicted to this form of drug using. It is begun in the first place for insomnia or to relieve neuralgic pains. It is not so much used now as formerly. Whether this is due to the greater difficulty in obtaining the drug, a better knowledge of its danger, or to its being replaced by one of the more recent hypnotics, I cannot say, but probably all three are in various degrees responsible. Something may have been gained by the replacing of this dangerous drug by one of the later ones of the present day.

The greatest danger arising from the use of this drug is in its depressing action upon the heart. This is so well known to medical men generally,

that the drug is not a favoured one with them on that account. Many fatalities have occurred through its use, and this has so affected the prescribing of the drug that it has almost practically dropped out of use. This being true of the professional use of the remedy, how much more dangerous it is for the laity to use who do not even understand its particular effects upon the system. A patient would be much more safe in the use of morphine than in the use of chloral, for morphine has practically the opposite effect upon the vital organ—the heart—to that of chloral. It has been lately claimed by one authority, that less fatality attends the use of chloral at the present day than formerly, and this is considered to be due to a purer preparation of the drug. Whether this is true or not, the fact remains, that chloral is one of the most dangerous drugs the laity can use. Certainly it should never be taken excepting under the direct supervision of a medical man, and a prescription containing this drug should never be repeated by a chemist unless he is quite satisfied that it was the intention of the physician that it should be.

Chloroform

The chloroform habit is another very dangerous one. It is generally resorted to in order to pro-

cure sleep or to soothe pain. To induce sleep the patient usually retires, then wets a handkerchief with some of the drug, and, lying on his side, holds the handkerchief to his face ; as the drug takes effect the arm drops and he gets no more of the drug. This he may do often without harm, but "familiarity breeds contempt," and, as has too often happened, he gets careless in assuming a safe position, and instead of the handkerchief being removed it falls across his face and he may never awake.

I once had an experience in a dentist's chair which showed me how very fascinating this form of drug-taking is. Being unwilling to allow the dentist to administer the chloroform by himself, I at his request put a few drops of the drug on a handkerchief, which he asked me to place to my face, and take it away as soon as I felt myself getting drowsy, which I did, while he extracted the tooth without my feeling any pain whatever. During the extraction I felt no pain, but on the contrary experienced a most pleasant sensation, which, had I not been a doctor, might have led me to resort to the use of chloroform on numerous occasions.

Another drug we desire to mention in connection with the drug habit is *Cocaine*. Cocaine is another very fascinating drug, and is very much

more largely used secretly than is generally supposed. Fortunately, the habit of taking cocaine is more amenable to treatment than that of taking most drugs of its class. It is a habit which is very easily acquired, and the risk of doing so is much greater than the general public are aware of. Many of the catarrh snuffs on sale in chemists' shops contain a proportion of this drug. The danger of having such a powerful drug on sale in this manner can be best inferred from the history of a patient of mine. The patient was a veterinary surgeon, a man of unusual physique and robustness, accustomed to live out of doors practically the whole time ; a man of strong will-power and perfect health. He was about the last sort of person that one would expect to become a drug-taker. Contracting a chill one day, he called upon a local chemist and asked him for something to relieve the cold in his head. One of the ordinary catarrh snuffs was given him, and the effect was very rapid and very satisfactory as far as the cold in the head was concerned. Later on, on taking another chill, he used another bottle of the same snuff. The relief was so great and so quickly attained that he decided to keep a supply of this preparation by him. He told me that he had not the faintest idea there was anything dangerous about the

preparation. He used it on several subsequent occasions whenever he felt a stuffiness in the head, and always with immediate relief. A few weeks afterwards he was surprised to find that he was taking it rather frequently. He decided to take it no more, but to his surprise and horror he found that he could not do without it ; he had become a cocaine fiend. He made a very determined fight to conquer the habit, but in spite of his splendid physique and his will-power he became more hopelessly involved in the meshes of the habit. He was finally placed in a private asylum, owing to the effect of the drug making him dangerous to those about him. In his madness he leapt from an upper window and received very severe injuries, breaking a number of his bones and being badly bruised in general. As soon as he was in a condition to be removed he was brought to my sanatorium for treatment, and it was while there that I obtained from him the above history. When one considers the effect of this drug upon a strong, healthy man such as he was, one trembles to think of the likely result upon delicate women and even children.

The danger of selling preparations containing cocaine has been recognised by several States of the American Union, and laws have been enacted prohibiting the sale of the drug in those

States, excepting under very restricted conditions.

The difference in effect of taking this drug from that of taking heroin is chiefly in its effect upon the higher centres. While heroin does not specially affect the mental condition, cocaine seems to waste most of its energy in that direction. Cocaine takers are apt to do the most wild and outrageous things. They apparently lose all sense of moral responsibility and proportion. One is never surprised to hear of the actions of a cocaine fiend being of the maddest possible nature.

One of my patients became addicted to its use in the following way: When visiting a friend's room one night he mentioned that he had a headache. His friend told him that he could soon cure that for him, and gave him an injection of cocaine. His headache soon left him. A few days after he cured another headache in the same way. A week later he did the same,—then found that he could not do without the drug. He became a physical and mental wreck; he was arrested in the street as an insane person, and his friends had great difficulty in getting him out of the hands of the law.

Cocaine is an alkaloid obtained from the coca leaves. The leaves themselves have a very stimulating effect upon those who use them. The Indians of South America are known to chew coca

leaves in order to enable them to carry heavy burdens over long distances and to climb mountains without undue fatigue. When taken in this form, the habit does not seem to be contracted in the same way as when the alkaloid cocaine is taken by itself. We ourselves have tested its use in connection with our army in order to ascertain whether our men could stand a more fatiguing march by its use than otherwise. For some reason or another we have not heard anything further of its use in that direction.

Athletes at one time were accustomed to chew the leaves before entering upon some strenuous competition. To a great extent I believe that that has also dropped out of fashion, but it is said that in some of the recent Marathon races a well-known athlete used these leaves to sustain his strength during the contest. That he came in fresher than most of his competitors might be accounted for in this way.

There are several preparations upon the market containing an extract of the leaves and sold as tonics. The general public will be well advised to take none of these preparations without first consulting their doctor.

This drug is much used by quacks in their remedies for alcoholism, but the only result is to replace one form of habit by another.

Indian Hemp

The taking of Indian hemp is seldom if ever met with in this country, but it is much used in India in the form of hashish. It is interesting merely from the strange delusions which sometimes follow its use.

It has been recommended by some as of use in the treatment of the morphine habit, and I once administered it to a patient with this intention. The effect was very striking; although I took the precaution to administer only half the usual dose, yet the patient had a most curious delusion. After administering this dose I sat down beside the patient in order to watch its effect. Nothing occurred for a few minutes, and we were engaged in ordinry conversation when I noticed a strange look come into the face of my patient. He ceased his conversation, and sat staring with increasing alarm at a chair opposite him some three or four feet away. On inquiring what was troubling him, he told me in horrified accents that he was splitting into two; one half of him, or rather a double of him, was passing from him and placing itself upon this chair. He said, "Now it is sitting looking at me; there are two of us, and yet both are myself." I had some considerable difficulty in allaying

his apprehension by telling him that it was merely the effect of the drug which I had administered, and that after a certain time this would pass away and his "double" would disappear. This took effect shortly afterwards, greatly to his relief. He assured me that he would not undergo the experience again for anything, and asked me to try some other method in order to cure his morphine habit.

I am told by those interested in the subject that the drug is used in India in order to produce this very effect. It is said that by its use it is much easier to project the astral, when it is desired to do so. Considering the effect that I have already related in the case of my patient, I should think that this is most likely to be the case. One reason why it has not become more popular in this country may be this very alarming effect.

Sleeping Powders

There is another class of drugs which, while considered quite harmless, are far from being so. I refer to the hypnotics Sulphanol, Trianol, and Veronal. When each of these was put upon the market it was lauded to the skies as a perfect and harmless remedy for insomnia, but my experience convinces me that they are not so

harmless as they are claimed to be. The question of interest to us is whether or not they are likely to form drug habits. As I have had to treat several patients addicted to their use, there cannot be any doubt of their being able to produce the drug habit.

The victims of this form of drug habit begin their use as a remedy for insomnia, thinking them to be quite harmless, and later on find that they could not do without them. As the effects of the drug wears off distressing symptoms appear, to relieve which greater quantities are taken, until the patient becomes a nervous wreck, with delusions of a marked character. Most of the victims of these drugs are chemists; sometimes a patient is met with of our own profession, but chiefly the supply of patients comes from among the former class. The delusions which these patients suffer are very marked, and generally harmless, although in one or two cases homicidal tendencies occur.

Trianol was responsible for one of my cases, the victim being a young chemist who resorted to the drug in the first place in order to overcome insomnia. Not being able to leave his business and take a proper holiday, he found it necessary to resort to the drug more or less frequently in order to secure a good night's rest.

Finally the effect lasted throughout the whole twenty-four hours. The quantity of the drug taken in order to procure sleep was such that he was quite unable to longer attend to his business during the day, owing to the very confused condition of his mind during the waking hours. After entering the sanatorium for treatment these delusions lasted quite forty-eight hours; the patient was very excited and constantly in trouble of some sort, but otherwise harmless enough, nor was he noisy. A cure was not difficult, in this respect differing greatly from that of some of the older forms of hypnotics.

Sulphanol was responsible for two cases which I had to treat; the symptoms were very similar to those of trianol, and in fact it was impossible to tell the one form of drug-taking from the other. The treatment was likewise satisfactory in both of these cases.

Veronal is considered to be a perfectly harmless hypnotic by a large majority of users. I have seen several marked cases of habit resulting from the use of this drug. One of these was that of a medical man who had taken the drug to produce sleep. Those who are accustomed to administer this drug know that the original form of it is very difficult of solution, and in order to obtain this it was necessary to dissolve the drug in

boiling water. If this was not done, the drug dissolved so slowly in the system that the effect was not apparent until some time during the next day if administered at bedtime. The patient to whom I have referred was not aware of this need, and finding that a dose which he had taken in cold water was not having any effect after an hour or so, resorted to another dose. Naturally he got no result, and each hour for several hours he took succeeding doses, thinking that he had not taken enough of the drug to overcome his insomnia. The next afternoon the whole of this large quantity of drug took effect, with the result that he nearly lost his life. It was very difficult to arouse him for many hours after he first went to sleep, and he remained drowsy, sleeping almost continuously for nearly a week. During this time it was very difficult to administer nourishment. All reflexes were completely abolished, and the result was a very sad one indeed. On coming out from under the influence of the drug he piteously asked for more, which of course was not given him ; but a habit had been formed, for no sooner was he able to obtain the drug than he resorted to it again, and continued to do so until he had received a proper course of treatment. He told me that after the effect of the drug wore off most distressing

symptoms set in, symptoms which even as a medical man he could not describe, they were so vague and generalised, but he assured me that they caused most intense suffering, and that nothing seemed of importance at the time but the allaying of these symptoms. The mental condition which followed the use of this drug in this particular case was most marked, the mind remaining very feeble and the intellect weak for some two or three weeks. The effect upon the muscular system was also very marked. The ability to walk with any degree of firmness was not obtained for quite a month after the cessation of all use of the drug. I am not quite sure that the patient ever fully recovered from the effect of the poison. Another case was that of a patient who had returned from India on leave. Being afflicted with insomnia, he had resorted to the drug, being told it was quite harmless. He was under treatment for three months, mania of a marked character being in full play when I first saw the case, and so violent was he at times that he required two attendants constantly day and night. Even after the subsidence of the mental excitement, which did not occur for several weeks, his mental condition was in a deplorable state, but he gradually and slowly recovered. During his illness I had a consulta-

tion with one of our leading alienists, and his opinion was that the man was hopelessly insane and incurable. I am glad to be able to say that he practically recovered and became normal.

Owing to the difficulty of dissolving the drug, the makers have issued a soluble form called veronal sodium. This, while no less dangerous for use indiscriminately and in undue doses, lessens the danger of taking too much of the drug, owing to its ready solubility and rapid effects.

Considering that one meets fairly often with patients who have come under the sway of the drug, it cannot be called a harmless one, and the laity ought not to use it without a medical man's supervision, and doctors ought not to prescribe it in the same careless way as apparently has existed up to the present.

There is a drug in very common use about which I should like to say a word while on the subject of the drug habit. It is commonly known by the name of *Bromide*. The form most used is the bromide of potassium. It is one of the most useful drugs we have, and one of the most frequently used. Now one may search widely in books dealing with the action of medicines without finding any reference to the danger of

acquiring from its use such a habit as I am about to describe. On the other hand, one will often find a statement to the effect that the drug is perfectly harmless; this is the experience of the writers of those books, and holds good in a great majority of cases. The patient I am about to describe was suffering from neurasthenia, and had read in some medical work of the harmlessness of bromides, and acquired a quantity of the drug in the hope that it would quiet his nerves. The effect on him was startling. The first night he used the drug I was called to his room, and found him in a state of great excitement and the room in great confusion. He became so violent that he had to be put into a strait-jacket. He had to be kept in this for three weeks. As this was contrary to all my previous experience of the drug, I could not believe that it was due to the bromide he had taken, but was compelled to do so when he had several subsequent attacks. In every one of these attacks a quantity of bromide was found on him and no other drug. I only mention this to show that in some cases it does affect the patient in a remarkable manner.

The means to which a patient will resort when he cannot get alcohol may be of interest to the student of inebriety, and concludes this part of

our subject. Alcoholics will use many strange substitutes for alcohol, such as methylated spirits, varnish, perfume, paraffin, etc. If you notice them at table you will find that they use large quantities of mustard and pepper, being particularly fond of cayenne. They will season their food to such an extent that other people could not possibly eat it, the sensitiveness of their palate being largely lost. For the same reason they take very large helpings of relishes, Worcester sauce being a favourite. One of the most violent attacks of delirium tremens I ever saw was in a patient who had drunk several bottles of this sauce. Many men resort to patent medicines and tonic mixtures in order to conceal their drinking habits. Women are fond of essence of ginger or peppermint—it is a respectable, if costly, method of drinking. These preparations contain a large proportion of alcohol, and it is for this that they are often taken.

Many suffer from a thirst habit, aside from any craving for stimulants, and take all sorts of liquids at frequent intervals. I had a patient who was remarkable in this way: he would drink half a gallon of water every hour during the day, although it was winter-time, and I had to treat this condition as well as alcoholism. There was no other disease present to account for this great

thirst; it was merely a habit. It is a very common practice for these patients to eat large quantities of sweets when they are not using alcohol, but they never take them when using the spirits.

CHAPTER V

TREATMENT

We now come to the question of the treatment of inebriety. It is impossible in a small work of this kind to attempt to describe all, or even a large number, of the methods of treatment used for this purpose; and although they might be interesting reading, they would not assist us much in curing our patients. The first essential in the treatment of alcoholism is to recognise that inebriety is a disease. Unnecessary as this statement may seem, yet we find many to-day who do not believe it, and it stands to reason that if the doctor starts with the belief that his patient has no disease, he is not likely to cure him.

Admitting alcoholism to be a disease, it is our duty as doctors to find a remedy for the complaint. One of the objects of this book is to show that such a remedy has been found, and in what cases it is successful, and how to administer it in order to obtain the best results. The question of treatment may be divided into several divisions,

namely, the moral treatment, the treatment by restraint, the treatment by law, the treatment by diet, etc., and the treatment by drugs. The method or methods of treatment pertaining to each of these divisions are essential to success. We are not only dealing with the physical body, but with human nature in all its various complications, and we are compelled to consider our patients in relation to the question of heredity, of environment, of social customs, social status, of climate and even race. The religious belief of the patient may have to be taken into account. It is evident that no " rule of thumb " will serve us here. A very broad conception of the whole question and a combination of the various methods is necessary if we wish to be successful in the treatment of the majority of our patients. I am convinced that this very lack of combination accounts for so many recorded failures. Let us take these various methods of treatment in their order, and study their effect upon the different varieties of the disease.

The Moral Treatment of Alcoholism

There is only one class of inebriate which is likely to benefit much by this method alone. This is the voluntary drinker. Yet this form of treat-

ment must play an important part in every method used to treat all alcoholics, if success is desired. If any one method of treatment has been thoroughly sifted and tried, surely this has. It counted on its side enormous forces, such as the prayers and pleadings of loving ones, the stern admonition of fathers, the fear and punishment of the law; all have been tried for ages with but a moderate success, and that almost entirely confined to one class of excessive drinkers. This is the method of treatment adopted in 90 per cent. of all cases of inebriety; and as successful results are in an inverse proportion to the number of patients so treated, it is worth our while studying closely the reason of this failure. There is an old saying that "failures may be the stepping-stones to success," and there can be no doubt that the failure to cure alcoholism by moral methods has led to a discovery of the real nature of the complaint, and consequently to its successful treatment. That the moral treatment of inebriety is a failure in the great majority of cases is not only evident all about us, but is freely admitted by all who have experience of such methods. While moral treatment should be tried in all cases, there is, as we have said, one class of alcoholics who are mostly to be benefited by this method—the voluntary

drinkers. They are not alcoholics in the true meaning of the term. They may be physically sound, and generally are. They have no craving for stimulants. After a night's drinking there is no desire to renew the experience—at least, for the time being. They are morally afflicted, not physically. It is a case here of curing the mind, not the body; consequently the moral method of treatment is the only one likely to be of any use in these cases. The parson rather than the doctor is the proper one to take charge of such cases, and is more likely to do them good. There is here a proper field of work for the temperance organisations as well as the clergy. Let one of these subjects of alcoholism join a church or a temperance society and his drinking habits will fall away from him like a loose garment. It is immaterial to the question how often he gets drunk in the year; once his mind is changed he is as soundly cured as if he had never got drunk in his life. There is no question of any physical disease to be remedied, no insatiable craving to be removed—simply a change of the mind and he is cured. It all seems so simple, yet some of these cases are the most difficult of all to treat. Many of these inebriates do not see why they should change their mind and give up drinking, and

herein lies the whole difficulty. They cannot see why they should deprive themselves of what they are pleased to term their "fun." They are quite prepared to defend their drinking by quoting from Scripture, etc., by referring to the fact that they are "three bottle" men, and as likely as not look upon all abstainers with contempt because they cannot do likewise. I am inclined to think that they rather glory in their ability to "take their drink like a man." What are we to do with such alcoholics? To brutally call them drunkards is to offend them beyond hope of forgiveness. If another alcoholic is pointed out to them as an object lesson, they say, "Yes, poor devil!"—pity him, but never for one moment do they imagine themselves likely to be classed with such. Get them to change their views of the question if you can; by any and every means possible get them to sign the pledge or join the church, or marry some good woman who is able to exercise the necessary influence. Many a man who has resisted all other influence has yielded to the wish of some sweet-dispositioned woman. A snapshot of them when at their worst shown to them when sober has sometimes been successful, for until they can see for themselves they will never believe any description of the condition they

got into when drinking. If the class of alcoholics of which I have been writing would follow the experience of a friend of mine, they would probably do as he did and give up drinking. Having made a bet that he would not take a drink that evening, he had the unusual experience of watching his companions go through their usual custom of getting drunk while he kept sober. As they grew merry he rather regretted that he could not drink with them as usual; but when their merriment passed into the maudlin stage he was compelled to leave them. His disgust was so great that he never got drunk again. It is a great pity that "Dick sober" cannot see "Dick drunk"; it would cure nine out of every ten cases of voluntary drinkers.

We now come to the question of the *treatment* of alcoholism *by Restraint*. Prior to the publication of my method of treatment in 1904 in the *British Medical Journal*, treatment by restraint was the only method used in this country in recognised homes and sanatoria, and that is largely the case to-day. There is an old saying that "old customs die hard," and this is particularly true to all methods of treatment. The treatment of alcoholism by restraint has perhaps some excuse for its lingering demise in unsuitable cases, because of its usefulness in the treatment

of a small percentage of cases. One has only to read the literature on the subject to ascertain how slowly the old faith dies. When one asks these lovers of antiquities why they do not try the newer methods, they have one—and only one—answer, namely, "I have had cases come to me which have been treated by the drug method and which have not been cured, therefore it cannot be any good. Why then try it?" Because they have met with cases which have been failures under the system of treatment by drugs they condemn the whole system. They do not know, or care to know, whether these were suitable cases or not. It is quite enough for them that they can find an unsuccessful case to condemn the whole treatment. If their own method of treatment was judged by the same standard they would no longer be justified in receiving patients for treatment. Foolish as such an answer may be, I am sorry to say it is the only one I have ever been able to get from these men. As to failures, I know of no method of treatment for alcoholism which is such a dismal failure as treatment by restraint. Often the reports of homes advocating restraint are stamped with failure on the face of them. As to what the patients of such homes think of the results obtained by treatment there, it is hardly

fair to say, as they may be prejudiced, but this I will say—out of several hundred of them to whom I have put the question I do not remember one patient who had a good word to say of either the treatment or its result, while what they did say would not be pleasant reading for those in charge of these places. Nevertheless, treatment by restraint has its proper and useful place, and for a certain class of patient it is essential. Where the mistake is so often made is in applying the treatment to all classes of alcoholism. If we examine the different classes of alcoholism in connection with this method, we will readily see where it is likely to prove useful and where it is bound to fail. Let us take the classification of alcoholism as laid down in this book, and proceed to examine each section in relation to treatment by restraint.

The first section we have is that of the daily or constant drinker. In this class we have to deal with a patient who has contracted a craving for alcohol. This craving has become uncontrollable, and the patient satisfies it whenever he can. Knowing this, those in favour of treatment by restraint say, " Let us shut this man up for two, three, five, or seven years where he cannot get the alcohol, and by the time we let him out he will have learned to do without it. We will see that

he has plain diet, exercise, and light and agreeable occupation. In short, they say, "By compelling him to lead a healthy life and depriving him of the alcohol we will cure him." But does it cure him? With regard to this class of alcoholics the answer must be in the negative—it cannot very well be otherwise. What in all this is going to remove the craving, which is a pathological factor and cannot be removed by any regulation of habits or diet? The patient enters the home with a craving for alcohol; he leaves it with a craving for alcohol, and whether he is two or seven years imprisoned makes no difference. Why seven years I do not know, but it may have some reference to the popular belief that once every seven years the whole body is renewed, and it may be hoped that a new body will be free from the craving. Personally I do not believe that seven times seven years would remove a genuine craving. Now let us see what really does happen. By their own reports the percentage of cures is a small one. These reports include all classes of alcoholics; quite a large percentage will come under other divisions of alcoholism—therefore not concerned with the present question. Out of the remainder I doubt whether one is ever cured. I have met several thousands of these patients, and so

far have not been able to find one undoubted cure. I am using the term " cure " in its strictest sense, meaning by the term that the patient has been entirely freed from his craving for drink. The effect of this sort of treatment upon patients varies very much according to the home, the patient, the method of his entering, the reason of his detention, or a combination of some or all of these factors. As to the method of entering, when one considers what a young man is signing away in agreeing to enter a restraint home, one might wonder how the managers of such homes obtain sufficient patients to enable them to pay expenses ; but it is often a case of " have to " in order to escape the consequences of some folly committed during a recent fit of drinking, or pressure brought to bear upon them in some other direction ; or they may be in a very penitential mood when they are willing to agree to enter. Very few enter with a determination to get cured if possible, and none of them expect to be there beyond the shortest possible period.

Having got our patient to sign away his liberty and enter a home, the next factor which will affect him will be the character of the home—the impression of the building, the grounds, the rooms provided for patients, the classes of

patients met with, the service, the food, the means of recreation, the staff; in fact, all that goes to make living away from home possible. That homes differ widely in these respects is well known; the best of them are but prisons, while some of them are far worse than any prison. I was once induced to visit a home by an agent who wished to sell the place to me. I shall never forget the impression the home made upon me. The whole place was gloomy and depressing in an extreme degree. I was glad to hurry through it and shorten my visit as much as possible, and I experienced a distinct feeling of relief when I stood once more in the roadway. I saw a dozen men in a dismal, shabby room, looking very much like their dilapidated surroundings. The effect upon these men can readily be imagined. I feel quite convinced that a week in such a place would drive most men to drink. At another place I visited, the interior arrangements were much better, but the building and grounds were cheerless and depressing. At another place nature had provided a charming view and even bracing air, but in all other respects the place was most depressing, and again I was glad to have the keys turned in the lock of the gate behind me as I left the place. If these places were intended to punish the inmates

they could not be better fitted for the purpose ; but their object is to reclaim, to elevate, to re-model, to encourage, to inspire hope, etc. The lives of the patients are to be brightened, their hopes raised—can any one imagine success under such conditions ? Having got our man to sign away his liberty and enter one of these homes, he soon realises what an awful mistake he has made. The temporary condition of mind which made it possible to obtain his signature has passed away, and he now resents the advantage that was taken of his condition, while he still more resents the fact that he is a prisoner—as much so as any one in Portland ; for if he leaves the confines of his prison he is liable to arrest and return by the first police officer he meets. Resentment and bitterness soon fill his mind, and ere long revenge is added. He only awaits his release to show what he thinks of such treatment. Having felt that he has been tricked into signing away his personal liberty, he now feels that he is being unjustly detained. His resentment grows rapidly with time.

If we review the question of this method of treatment upon this class of patients, we will easily see why it is a failure and why it must always be a failure. In the first place, the patient has a disease characterised by a craving due to a

pathological condition of his nerve cells. Now it stands to reason that no amount of punishment will cure this condition. The other factor is his inability to obtain a supply of alcohol. We will suppose that he really cannot get a supply ; he is not much better off on that account. It is quite true that he is not indulging his craving, but this is far outweighed by the adverse factors. He is also supposed to improve in physical health through enforced regular habits. This may be true with regard to the best class of homes, where the comfort of the patients is made the first consideration and the question of profit takes a secondary place, but in all others the depressing surroundings of the patients must greatly, if not entirely, offset this. But as we wish to be perfectly fair, in order to do so we will send our patient to one of the very best homes in England and note the effect. We succeed, after considerable searching, in finding a home with bright surroundings and every possible comfort for the patient. We are informed by the officer in charge that the patient must agree to remain for a period of several years. The terms are high, but as we are anxious to reclaim the patient we do not object to this. Now let us watch the effect upon our patient of this beautiful home and its surroundings. We

must not forget that this patient of ours has a physical disease which, as I have already shown, is not influenced by this method of treatment. One of three results will follow: either he will make a manly resolution to get all the benefit he can out of his stay at the home, or he will nurse his revenge till freed, or he will lose all hope and join the ranks of the ne'er-do-weel's with whom he is compelled to consort daily. The first of these results is the least likely to happen. With regard to the second result, I may quote one or two cases in illustration of this. The first was a young man about twenty-five years old. He had been confined in one of our best-known homes for two years. When he regained his liberty he went to the nearest inn and got gloriously full, with the one object of revenging himself upon those who had sent him to the home. Here is a case of a man who lost two years out of his life, with the only result of causing hard feeling towards those who had placed him there. When I first saw this patient he was very ill in bed from the effects of a prolonged spree. When he had sufficiently recovered from this to travel, he was sent to me for treatment. I did not find it necessary to restrict his liberty for a single day, and instead of having to waste another two

years he left my care at the end of six weeks. He is now, and has been ever since his treatment, one of the busiest men in London. He was treated seven years ago, but has never relapsed. He has entire charge of very large and important works—a position which he would not hold for twenty-four hours if he resorted to his old habits.

Another case was that of a gentleman who during an attack of drinking signed papers and was safely shut up in a home. The next day, on realising what he had done, he demanded to be set at liberty, and when this was refused he took a large pocket-knife from his pocket and threatened to kill himself if he was not set at liberty at once. That he meant what he said was evident from the fact that he was released immediately. This was one of our best homes, and from an outsider's point of view a most charming place. I knew the medical superintendent well, and there was nothing about the home or its management with which the patient could find fault. It was simply the fact that the patient, as soon as he sobered up, knew that his disease was one in which there was no need for imprisonment, and he resented his incarceration in the only way possible to him. On going home his friends told him that something ought to be done, and he quite agreed with them, saying, "I need a doctor, not a jailer";

and when informed that he could enter a home for treatment where he could enjoy his personal liberty, he readily consented to go. How I came to know the story of his visit to the other home was as follows—almost the first thing he asked me was permission to go over the place. After he had done so he said, "You will wonder why I did that," and he then told me his history. This patient knew what he required better than the doctor who wished to lock him up. I never had a moment's trouble with him, and he made an excellent cure.

Now it is quite evident that in both of these cases the patient knew what was needed while the doctor and the friends did not. One might go on quoting such cases by the hundred, but these two will do just as well as a hundred to show that in this class of patients the prison system is not only useless but harmful.

What applies to the constant drinker applies equally to the periodical drinker. We cannot take time here quoting cases for this class, of a similar nature to the above. It is in the three remaining classes of alcoholism that treatment by restraint is likely to be of service, namely, in dipsomania, voluntary drinking, and drug-taking. In the voluntary drinker there is nothing to treat by restraint; here it is simply a question of morals,

and no one nowadays believes that restraint has a beneficial effect upon morals. It is possible that in some cases it may act as a punishment with a beneficial effect, but the number of cases in which it would so act would be far outnumbered by the cases in which it would act in a demoralising way. It is therefore not safe to put a voluntary drinker into a home. The risk of harm is far greater than the possible benefit.

Then there is the drug-taker. Restraint is useful in these cases, and here it has a legitimate use, and in many cases is essential, but not in all, as I shall show later on.

The one class of inebriate for whom restraint is not only useful but essential is the dipsomaniac ; here it is absolutely necessary in many cases to use restraint, not only as a method of treatment but also as a precaution, for the danger to life from many of these patients is greater than is generally believed. It is my opinion that every dipsomaniac should be placed under restraint while being treated. That some of these patients may be treated successfully without restraint I know, as I have so treated some cases myself, but when one has had several narrow escapes from death at the hands of these gentlemen one is likely to change his opinion as well as his method of treatment. My advice

to every general practitioner who may have a case of this kind is to get the patient into a home as soon as possible, and keep him there as long as possible. The treatment of these patients outside a home is not often satisfactory, and may be dangerous to the man in charge.

Treatment by restraint may be said to be useful in drug cases, essential in dipsomania, of little use in voluntary cases, and positively harmful in daily alcoholics.

Having now studied the question as to what cases are and what are not benefited by restraint, we are in a position to judge as to the probable benefit or otherwise of imprisonment of alcoholics, and to see what a farce it is to fill our jails with these patients. If it were only a question of wasting the money it would be bad enough, but when one thinks of the enormous harm done to these alcoholics, one wonders what our law-givers are about that such a condition of things is not changed.

Turn one-half the money used in keeping these poor patients in prison to use in constructing and maintaining proper homes for the treatment of such cases, and the question of alcoholism would soon be a minor one. I consider our law in regard to these cases as antiquated and unscientific, and if I were Home

Secretary and had sufficient power I would issue an order to discharge every one imprisoned for alcoholism, and would not rest until I had the present law repealed and a sane one in its place. Imprisonment for alcoholism alone is a reflection on the sanity of the nation. I do not expect many outside the medical profession to agree with me in this, as the scientific grasp of the whole question of alcoholism is of such recent date that they are not yet able to understand it. We have heard of our forefathers burning innocent women and children for witchery and of hanging men for stealing sheep ; I consider our present laws on alcoholism quite as much out of place on the Statute Book as they were, and the sooner they are off the better for all concerned.

The Treatment of Alcoholism by Diet

We now come to the question of treatment by diet. This term covers a number of divisions, and each will repay a careful study by those interested in the question of the treatment of alcoholism. The treatment of alcoholism by diet is understood to mean one thing by one person and another by another person. To the Norwegian it means saturation of the food with alcohol, to the vegetarian it means a strictly

vegetable diet, the meat diet advocate believes in a strictly meat diet ; then there are numerous adherents of the fruit diet in its many divisions, namely, the orange, the lemon, the apple, the pear, the raisin, the grape, the water-melon, and the combination fruit diet cure. To others it may mean generous diet ; to others again it means a diet minus pepper, mustard, and all such condiments. Then others believe in a salt cure. In fact it is difficult to enumerate the complete list as it is so lengthy, but the above will give an idea of the various interpretations placed upon the term "diet treatment." The diet advocates certainly do not lack variety. A glance at their list reminds me of a medical man I met in Canada. He only had one prescription for all his patients, but he had seventeen different drugs in it ; and it seems to me that this shot-gun mixture of his and the varied choice afforded by the diet people have points in common. If one thing does not suit your case, try another. At the first blush the whole thing appears nonsense, but in looking into the question one finds food for reflection in every one of the methods named. Let us take these in detail and see what we can learn from them. The most important of these is probably the Saturation cure. The saturation cure as used by the Swedish Govern-

ment is not strictly a diet cure, but can be classed here as such since it is as much a diet cure as a drug cure. The cure consists of soaking the patient's food in alcohol of some form or another, usually in that of his favourite drink. Every particle of food is thoroughly soaked in this, and no food allowed which has not been so treated. At first the patient is delighted with the method, but in a very short time he finds it difficult to eat the food so prepared, and shortly afterwards his stomach refuses it altogether, and the very sight of food so treated makes him sick. After a few days of such treatment many are quite unable to bear the sight or smell of alcohol, and in some cases it acts for a considerable time. In my opinion the treatment is absolutely useless in classes 1, 2, and 3, but might be of service in class 4. I have tested the treatment in the first three classes in a manner which places the matter beyond all doubt in my own mind; I have repeatedly pushed it to such an extent that I kept the patient vomiting for two or three days, but although I have tried it in many cases I have never yet had a patient upon whom it had any effect for more than a few weeks. I have seen patients so ill from its effects that they could not help being sick for days afterwards at the mere sight of alcohol, and take it eagerly

in a fortnight without any apparently disturbing effects upon them. Its effect is more moral than physical. It is sometimes successful with voluntary drinkers, and while it is of no use by itself in classes 1, 2, and 3, it is a very valuable aid in connection with some forms of treatment. To this I will refer later on.

The Vegetable Diet cure is strongly believed in by those who believe that meat is the root of all evil. Vegetarianism concerns us only in so far as it affects the question of alcoholism. It is one of those things which suits some people and not others. If it suits an alcoholic patient to the extent of improving his general health, to that extent it will benefit him; but this is not enough to justify one in terming it a cure for alcoholism. It is likely to prove of help in those cases where the patient is consuming an undue amount of meat and taking an insufficient amount of exercise; the waste products that accumulate in the body frequently produce a great amount of depression. This in an alcoholic may be depressing him sufficiently to cause him to drink to excess. In such a case a change to a vegetable diet may be successful in curing him for the time being. Although vegetarianism is not a cure for alcoholism in itself, yet we will often find it useful in the general

treatment of alcoholic patients. That it is not a cure is further made manifest when one sees vegetarians who are as confirmed inebriates as any meat eaters.

Again, we have those who pin their faith to the very opposite, namely, a meat diet. They claim that it is possible to cure alcoholics by feeding them on an exclusively meat diet. Here we have another apparent contradiction, yet while it is not a cure in itself it is capable of being of the greatest help in certain conditions. Just as an exclusively meat diet is useful in certain forms of dyspepsia, so it is useful in treating alcoholics whose attacks are due to this particular form of dyspepsia; cure the dyspepsia and you cure the attacks. This is also useful in general treatment at times.

We now come to the question of the treatment of alcoholism by means of fruit. Let me refresh your memory with a list of fruit used by advocates of this method; it includes oranges, lemons, apples, grapes, raisins, and water-melons. There are three factors common to most of this group, namely, the acidity, the sugar, and their cathartic action. The latter is practically the most important of these. As I have stated before, some men begin their drinking because their system is loaded with waste products, causing

depression ; the fruit relieves this and the need for alcohol at the same time. With regard to the acid fruits, we know that the citric acid of the lemons and oranges has a cooling effect upon the blood, and in some people of a hot-blooded nature this may be successful in preventing outbreaks of drinking. There can be no doubt that many drinking men find both oranges and lemons of great help in their battle against alcohol. I have known men who have eaten oranges every morning for years, and who felt quite convinced that it helped them greatly. Others again when sobering up consume great numbers of oranges or lemons, and seem to find them of great assistance. The effect of lemons when sobering up is well shown in the following incident : One of my patients had had a severe attack of delirium tremens, and was left with a hard, dry, furred tongue ; one of those tongues which look and feel like a piece of old burnt leather—you feel half-afraid to take hold of it for fear it will break in your hands—what is known in the medical profession as " an extreme typhoid tongue." I had used all my usual remedies without any marked gain, and the persistence of this condition, together with the accompanying symptoms, caused me considerable concern. A patient who had been a hard drinker

in his time offered to cure him in a few hours if I would let him. I gladly availed myself of his riper experience. He made a large jugful of strong lemonade, and sitting at the patient's side steadily fed him with this. When I saw the patient two hours later I could hardly credit what I saw. The look of strained anxiety was replaced by one of great relief, and there was a remarkable improvement in the pulse ; the tongue was cleared almost beyond belief, and the patient was asking for food. On expressing my thanks to the old hand for his valuable help, he told me that he had used it in many cases and always with entire success. I have used it in numerous cases since, with the greatest benefit to the patient. If lemons can be of such service in these cases, it is only reasonable to assume that in minor cases of alcoholism they may be of service in preventing an outbreak of drinking. What applies to lemons applies also to oranges in a lesser degree. Before leaving the question of lemons I ought to say that lemons are not without danger, as the following will show. While penning these lines an American gentleman consulted me with regard to his health. I found that he had chronic bronchitis with heart complications. He suffered greatly from cold feet and hands,

always feeling chilly. I learned from his wife that he was very fond of a glass of lemonade, and took one every night. As this was strongly contra-indicated by his condition I got him to leave it off for a short time, but one night after being in the City all day he decided to try it again and drank a jugful of it, and as usual followed it by a warm bath; while drying himself he died suddenly. I had advised him to go to Algiers for the winter, and he had bought his ticket. After closely investigating the circumstances, I could come to no other conclusion than that he had died from the effects of the lemonade.

The Grape Cure.—The advocates of this method of treating disease claim to have obtained some remarkable results. I have no personal knowledge of it, but think it likely to aid the alcoholic mainly by its effects upon the general health. I had a large number of vines at one of my sanatoria, and allowed the patients to eat freely of the grapes when in season, but beyond the general effect of fruit already mentioned I did not notice any particular effect. I think it likely we should have heard more of the subject if there was any specific benefit derived from the use of the fruit.

The Raisin Cure.—The well-known effects of

this fruit upon the system may account for its place in the list of remedies. The sugar may have some effect also, for from some reason yet unexplained to physiologists sugar plays a large part in the drama of drinking, to which I have already referred.

Water-melons.—In America many men can resist the craving for alcohol if they can obtain plenty of water-melons. Here we have added the important item of water, and have three factors at work helping the alcoholic; he has a substitute for alcohol in the large quantity of sugar, the pulp of the melon with its cathartic effect, and the water with its flushing effect; these might well help a man whose drinking was caused by nerve irritation due to an excess of toxins in the system.

The combined fruit treatment is largely a combination of the preceding. As a great many men resort to alcohol owing to an irritable condition of the nerves caused by an excess of toxins in the system, it is quite conceivable that they may find sufficient help in the use of the fruit to enable them to resist the craving for alcohol. Anything which will clear the system of toxins will help them; therefore fruit affords them an ideal combination. One does not wonder that it is a great favourite with alcoholics.

The Generous Diet Cure.—It seems a simple thing to say, "Fill a man's stomach and he will not drink to excess." If that was all we had to do, the treatment of alcoholism would be an easy matter. Unfortunately it is not a cure, but, like the above remedies, only a help. That a man is less likely to drink on a full stomach than on an empty one is quite true, but to look upon this as a cure is quite another matter. It is also quite true that with certain men a generous diet is quite sufficient to keep them off the drink. In this as in all other methods there may be found help, but not a cure. That a man with a full stomach will have less craving for alcohol is easily understood, but to expect food alone to satisfy an alcoholic craving is to plead entire ignorance of the whole subject. The intention of a large number of those would-be doctors is of the kindest, and in very mild cases their treatment may be of some use, but when they attempt to stay the craving of confirmed alcoholism by such means they are like a man trying to resist the tide with a broom. If their good intentions ended merely in failure it would not matter so much, but unfortunately this is not the case. The results of their efforts are more far-reaching than this, for by their failure to cure they discourage the patient

and cause him to take an unnecessarily gloomy view of his case, and in some cases only prevent him from making further efforts towards a cure. That good feeding is an essential in the treatment of alcoholism goes without saying, but it must take its proper place in the treatment and not be put forward as a cure.

The Treatment of Alcoholism by Drugs

Before proceeding to detail the actual method of treatment by drugs, I would like to say a few words about the history of the movement in this country. One is quite accustomed now to hear of a patient going away for six weeks and returning cured of his alcoholism ; but that is of very recent date. One did not hear of it, say, ten years ago—or at least very seldom. Ten years ago any advocate of the short term or drug treatment for alcoholism was more often laughed at than listened to. When I founded the Norwood Sanatorium my greatest difficulty was in persuading the profession that there was anything in the treatment of alcoholism by means of drugs. One easily remembers the incredulous smile with which one's statements were received. One reads of our insular prejudice, but to realise it it is necessary that one should be a social reformer in some direction ; then, and only

then, can one get the faintest idea of its vastness and its solid stupidity. I no longer wonder that the French shrug their shoulders at us in despair. But, like every other truth, this treatment had to prevail in the end. When I opened the Norwood Sanatorium patients came to me in spite of the doctors—not on account of them. Some were told by their doctors that all sorts of harm would befall them it they took the treatment; not one but several were told they might consider themselves lucky if they returned alive. Others were told that the treatment would affect their heart in various ways. Others, that their mind was in danger. In the denseness of their ignorance of the whole question a certain section of the profession carried their opposition to an extent that was actual persecution. Nevertheless, patients presented themselves for treatment, were cured, and reported themselves to their doctors on their return home. Thus was the truth greatly manifested. To show to what an extent a prejudiced person may sometimes go rather than relinquish his prejudices, the following incident will serve. A patient entered the sanatorium with a history of daily drinking to excess covering a period of several years. His failing was known to all the villagers, as he might be seen any day reeling about the streets. He informed me that his doctor had

done all he could to prevent him coming, and prophesied that he would return in his coffin. When he returned home not only alive but sober, this doctor made a bet that he would be drinking again inside of a week ; losing this bet he made another—that the patient would be drinking within a month ; when he lost this also he made a still further one—that he would relapse inside of three months. On losing this bet, in order to prove that his opinion was correct, he resorted to a trick of such a dastardly nature that without the fullest proof I could not credit it of any member of our profession. Noticing that his former patient had a slight cough, he called him into his surgery and made him up a cough mixture—or at least a mixture purporting to be one. This mixture contained principally alcohol disguised. On the patient attempting to take it he vomited freely, telling his wife that there must be something wrong about it. But his wife told him that some cough mixtures were intended to make one sick—so he took it again, with a similar result. On asking the doctor for an explanation, the doctor only laughed, but admitted later on what he had done. Here is a case of a man engaged in one of the noblest professions risking this man's whole career rather than give up his prejudice. Although this happened fifteen years ago, I am glad to be able to

say that the patient has never relapsed and has held an important position all that time. Could prejudice go further than this? I think not. Truth generally triumphs in the end, and now we find the treatment which was laughed at a few years ago given the foremost place.

Leaving the question of the history, let us describe the treatment itself. The first duty of the doctor is to make a diagnosis. I do not mean by this that the doctor should decide whether or not the patient drinks to excess, although that will be also necessary, for all patients brought to a home are not necessarily alcoholics; but by careful investigation of the history not only to decide that he is an alcoholic, but to place him in his proper class. Until this is done, no real progress can be made. I wish to emphasise this point strongly; it is not enough to say, "Yes, the man is a drunkard," and put him under treatment. It would be just as wise to administer a febrifuge to all patients with a rise in temperature, without ascertaining the cause of the fever, as to treat an alcoholic simply on the fact that he drinks to excess. The battle is won or lost at the very beginning of the case, and any time spent in a careful diagnosis will be well rewarded in the results obtained. The examination having placed him in his

proper class, we have to carefully ascertain what are the individual characteristics of his case. These three inquiries are of increasing importance from the first to the last. Is the patient an alcoholic? There are some who will think this an unnecessary question, seeing that his friends have brought him for treatment. This does not necessarily follow; friends may be mistaken, as we sometimes find to be the case, for it must be remembered that all men who drink to excess are not alcoholics. I have sometimes found the patient himself to be mistaken on this point, and if this is possible for the patient, it is fair to assume that his friends may be mistaken also. How are we to ascertain that he is an alcoholic? Before we can do this we must have some definition of what an alcoholic is. I have adopted the following definition: An alcoholic is one who either continually or at certain periods suffers from a craving for alcohol or one of its substitutes. It will be apparent at once that this definition does not include the class of voluntary drinkers. The main factor in the disease is the craving; the voluntary drinker has no craving, consequently he is not an alcoholic. With this definition as a basis to work upon, we can soon decide whether or not the patient is an alcoholic. A careful

inquiry into the history of the patient will generally enable us to ascertain whether there is any craving or not. If the craving is entirely wanting, the case is not one of alcoholism. Let me illustrate this by a case or two. A man was brought to the Norwood Sanatorium by a medical man who had had him as a residential patient for two or three years. Owing to this fact, the usual careful inquiry into his history was omitted. A course of treatment was administered, which did him no good whatever. Here was a medical man who, having had the patient in his house for two or three years, assured me that he was a chronic alcoholic from whom it was impossible to keep the drink. Several of his friends assured me that his case was hopeless. The patient himself admitted that they were justified in placing him under restraint. Later on an inquiry into his history showed that he was not an alcoholic at all. His drinking habits began with a great disappointment in love. When I had ascertained this I asked him why he drank to excess—his reply made the whole diagnosis quite clear. He said, "What have I to live for? My life is ruined, and I am a broken man. Give me something to live for, and I will not touch alcohol. I am a young man, and I take it to deaden my feeling." Here was a healthy young man without

the slightest craving who deliberately soaked himself with alcohol on every possible occasion, and so far as habits and appearance went was a confirmed inebriate. All treatment was wasted on this patient. He found an interest in life and from that moment became a teetotaller. This man was never an alcoholic, and was not a fit subject for treatment, because he never had a craving. The whole thing was mental, not physical. Let us take another case, and compare it with this. I had occasion to call upon a friend of mine at his place in the City. He invited me to go to a café where we could discuss our business. While there, he ordered a whisky-and-soda, although it was only 10 o'clock in the forenoon. When I refused to join him in this, the conversation turned upon alcoholism. I learned that he was accustomed to take several drinks of alcohol, beginning with one before breakfast. The object of my visit was to arrange for the treatment of a relative of his, and when I told him that if he was not careful he would require treatment himself, he thought I was joking, but thought the joke a very poor one. When he discovered that I was in earnest, he was very indignant, and told me that he was never drunk, that what he took never affected him in any way, that his hand was as steady as mine and his mind as clear,

and that it was absolute nonsense to say there was anything in common between him and the poor fellow whom he wished to place in my charge. I asked him to abstain for a week, and if he found that he had a craving for alcohol, aside from mere habit, he must consider himself an alcoholic; if not he was still free. In his eagerness to prove his absolute independence of it, he offered to abstain for a longer period. When I next saw him he candidly admitted that I was quite right, for on abstaining he found that he had a most marked craving for alcohol. His hand was not steady, nor his mind clear without it.

If we compare these two cases, what do we find? In the first case was a man who got drunk on every possible occasion and admitted his weakness readily, and was willing to place himself under restraint and treatment; yet he was not an alcoholic. In the second case we have a man who never got drunk, attended daily to his work with a clear head and steady hand, and who indignantly resented the very idea that he was an alcoholic; yet he was an alcoholic and required treatment.

I think these two cases will illustrate the difficulty one may meet with in diagnosing the presence or otherwise of alcoholism in a patient who drinks to excess.

Having diagnosed a case of alcoholism, the next most important thing is to properly classify it. If the patient belongs to the first class the craving will be constant. By this I do not mean that the craving will be of a constantly pronounced type, nor need it be always in strong evidence to the patient himself; indeed, it may be of such a mild character at times that the patient may well doubt its presence. This is more likely to be the case during periods of enforced abstention. At such times the patient is very apt to tell one that he is entirely free from all desire for alcohol, but if you wish to prove that this is not the case place temptation in his way. In this class of alcoholics the craving is always present: to prove this is not an easy matter in some cases, but years of experience will enable the expert to do so satisfactorily. As the whole question of classification and consequently of treatment hinges on this question of craving, it is of the greatest importance to learn all one may about it. Ask any doctor if he knows what this craving is, and one of two things will happen: either he will consider the question so elementary that it requires no answer, or he will tell you that it means the raging thirst which accompanies an outbreak of drinking. This is quite true, but it is such an

obvious fact that it does not help us in the least; a child could tell us as much. What would be of assistance to us in diagnosis, and essential to the treatment of a case, is a knowledge of how to detect the presence of this craving when it is so disguised and hidden that even the patient himself does not know of its existence. This craving assumes so many disguises and aspects, with so many difficult phases, that only long experience and careful investigation will in many cases reveal it. The forms and disguises are so numerous that it would be impossible to give a list of them in a work of this size. At the same time it will be useful to mention a few of them in order to indicate the line of investigation necessary. Lest the reader wearies of this question of craving, let me remind him that it is a crucial point in both diagnosis and treatment, and that no one will ever be successful in curing these cases until he has mastered it. The grosser forms of it are self-evident and so well known that they need not detain us for a moment. With regard to the less obvious forms we cannot do better than study them early in the day—before they have been obliterated by a further supply of alcohol. Perhaps as good a place as any to note their effects is the smoking-room of a passenger steamer. One should go

early, as many of these alcoholics are poor sleepers and consequently are to be found among the first in the room; those who are able to sleep can be studied later on. Note the non-drinker as he paces the deck filling his lungs with ozone; he is bubbling over with cheerfulness and merriment. His very "Good morning" is refreshing, and does one good to hear it. Now note the greeting you get from the man who was so very amiable the night before! It is possibly friendly enough, but it lacks all the vitality of the former greeting. You miss something at once. Later on in the day this lack has disappeared. This lack may be marked, or it may be so slight as to require the trained eye to see it, and there will be all degrees of it met with in the study of a number of cases. It is hardly necessary for me to say that one must make due allowance for any other causes for this difference between night and morning. I would therefore say to the student of alcoholism, take every opportunity of studying the differences between night and morning in drinking men, and you will soon be able to recognise what is meant by the term "craving." Another good place to study it is at a protracted Board Meeting. Those who are alcoholics will be indistinguishable from the others at first, but as time wears on and the

effect of the last drink wears off, the difference becomes more pronounced, and the alcoholic is no longer the man he was when he entered the room. Then he was full of fight—now he is willing to give in on all points if that will only bring the meeting to a close, so that he may revive his drooping vitality. Or, if the matter is too important for him to give in to his opponent, his opposition takes the form of a dogged and unreasonable attitude characterised by great irritation. Here also one finds all degrees of symptoms, from the above gross kind to that delicate form which requires the trained eye to detect. Another excellent place in which to study the forms of craving is the drawing-room. There we may study some of its finer phases. Church also supplies abundant evidence of it, and although one tries to ignore it, unfortunately the trained eye will not be denied. The theatre also is a useful place in which to study the question. But all these places are only capable of showing the outward signs, and while these are useful in training, their merits are few in comparison with the reading of subjective signs. Before passing on to these latter, it will be advisable to mention some of the more easily noted objective signs. Some signs are common to both alcoholics and users of alcohol who are

not yet alcoholics. It is not worth while naming all these as they are so well known. Those of interest from a diagnostic point of view are as follows: The watery eye, the drooping underlip, the tuberous nose, the trembling hand, and the weak knees. Any one of these taken alone might be misleading, but a combination of them taken together with the more obvious signs of drinking, is not likely to mislead the inquirer. The well-known watery eye is not easily mistaken for anything else. The drooping underlip should be looked for when the patient is reading, and excepting in the very old and feeble is, when found, very diagnostic. When the patient's facial muscles are relaxed the lower lip will droop to a noticeable degree, and in some cases to such an extent as to permit of dribbling of the saliva, and short of this a vacant expression may be present. This instantly disappears when the patient is spoken to. This may exist quite independently of alcoholism, but when accompanied by other signs of drinking is conclusive. The tremor of the hands is an easily noted sign, and the effort the patient makes to hide it only serves to emphasise it. There are many causes for this trembling of the hands, and one must be careful not to judge a patient by this alone, or one may fall into very

grievous error. It is only when we exclude all other causes, and find this trembling associated with other signs, that we are justified in accepting it us such. The weak knees are particularly noticeable if the patient is sitting on a low chair. He will then give support to them by spreading his feet and bringing his knees together, forming a triangle with the apex at the knees. But it is so long before these signs are apparent that we must make our diagnosis if we wish to do the best for our patient, and we must therefore try to detect the presence of the craving without these. We therefore turn to those means of detecting the presence of the craving at a much earlier stage. Let us take a case. A wife being anxious about her husband's drinking habits induces him to visit the doctor. He laughingly tells the doctor that he has only come to please his wife, and that there is nothing the matter with him. He looks perfectly healthy. Now, how are we to proceed in order to decide which of the two is correct? The history reveals occasional outbreaks of drinking, but nothing beyond what many men do who are not alcoholic, therefore we get no help in that direction. We next systematically examine the nervous system from head to feet and find it apparently sound. Then we fall back upon

the history and sift it thoroughly, in order to see if there is any shred of evidence in favour of a craving ; we find nothing. Next we proceed to question the patient closely with regard to any pains or unusual sensations, and especially any which are relieved by alcohol. If we can find one we should place a finger upon it and not let go until we are satisfied that it has nothing to do with the craving. On the other hand, if we find such a pain or abnormal sensation which is relieved by alcohol and returns whenever the alcohol is withdrawn, we are possibly dealing with the craving. The forms which these pains and sensations take are numerous, as we may well expect when it is remembered that these are due to diseased nerves. We must be prepared for all forms of indefinite pains throughout the body, those of the heart and stomach being in the forefront for number. It is a question whether gastric discomfort or palpitation has first place, but I think it is a question of sex, men favouring the stomach while women favour the heart. An indefinite boring or burning sensation, sometimes amounting to actual pain, is a very common form. This is generally in the abdominal region. But the question may be asked here, how are we going to distinguish these symptoms from those due to other forms

of nerve diseases? It must be remembered that we first of all examined the nervous system and found nothing; then we had a history of excessive drinking, and these pains or sensations are always relieved by alcohol and return when the alcohol is withdrawn. This would not hold good in all cases of nerve trouble. Let us now suppose that our examination has not revealed anything definite; how are we to proceed with the diagnosis? There is only one thing to be done. The patient has laughed at the idea of his being an alcoholic, and has said that he can take it or leave it alone—that it makes no difference to him. This gives us the desired opening, and we request him to be an abstainer for a month or two. It is now the duty of the wife to note any changes in him during that time. If he is an alcoholic the withdrawal of the alcohol will accentuate the nerve irritation which was so slight that we could not detect it while he was drinking, and it will manifest itself in some form or other. If the man is candid he will admit missing the alcohol, but failing this we must depend upon the wife for any evidence of such a change.

Enough has been said to show how the diagnosis is made. We now proceed to classify him. If we find no craving we are justified in diagnosing

the case as non-alcoholic. If, on the other hand, we do find a craving we proceed to the classification. The classification of patients is comparatively easy. Having diagnosed a craving, we next proceed to ascertain if it is continuous or intermittent. If the former, we place him in class 1. If the latter, we have to decide whether to place him in class 2 or 3. If there is no mania we place him in class 2; if mania is present, class 3. If no craving is present we place him in class 4. It must be remembered that these divisions are arbitrary, and it will be found that it is not always easy to sharply limit the classes, for cases will be constantly cropping up which are borderland cases, and must be dealt with on their merits; but the great majority of cases will drop easily into one or other of these classes.

Having diagnosed our cases and having properly classified them, we next proceed to the all-important question of treatment. We have been to great pains in order to classify the patient—we now take advantage of our classification and will therefore consider the question of the treatment of each class separately. The most important class of cases is class 1. In describing the treatment of these patients we not only take the most important class, but

we will be able to apply the same treatment with certain modifications to classes 2 and 3.

The main object of this book is the presentation of a successful method of treatment and the curing of alcoholism. In discussing drug treatment it will be necessary to come into contact with long held views of an opposing nature. As I wish to be perfectly fair to all, I will describe every well-known form of treatment, conferring upon each every advantage that I consider it merits. Aside from the question of fairness, I do not hesitate to take up the time of the reader in this matter, as every one of the methods described has its value, and in its proper place proves a useful help in any proper method of treatment. The following are some of the best-known treatments: The home treatment, the moral treatment, treatment by travelling, the fruit treatment, treatment in colonies, treatment by restraint, and the drug treatment.

The Home Treatment

Probably this is the most commonly practised of all treatments for alcoholism. There are several reasons for this, the main ones being the question of cost, the fear of publicity, and the faith in home or personal influence—all three are

powerful factors. I think the least powerful is the question of cost, for women especially will make almost any sacrifice in order to get the son or husband cured. The personal influence factor is very strong ; in some women no number of failures will convince them that they are not going to succeed in the end. This is a great drawback to the patient, as they allow the disease to reach a stage when no one can do any good. They completely fail to recognise the subtle changes going on in the patient's system, their main object being to cut short each attack. It is sometimes almost impossible to restrain oneself when listening to their transparent efforts to cover up the real condition of things. But I think the strongest reason of the three is the dread of publicity. This last factor alone prevents a very large number of patients from being sent to homes for treatment. One cannot altogether blame them for this ; public opinion has long been trained to consider alcoholism as a vice, not a disease—therefore to have a drinking one in the family was a terrible disaster. How then could one publish the whole thing by sending the patient to a home ? Whatever the reason, it is deplorable that patients are prevented from obtaining the proper and effectual help which they so much need. The home treatment

consists of an attempt to prevent the patient from obtaining supplies, and in feeding. I have said that there is something useful in all forms of treatment; in the home treatment it is the feeding. There are large numbers of remedies advertised in the daily press for the home treatment of alcoholism. Patients will be well advised to keep their money in their pockets when contemplating their purchase.

The Moral Treatment

For a patient without a craving this is the proper course. Home influence ought to have full play in all these cases, backed by all the outside influence the friends can command. The excessive drinking of these patients is a deliberate act; it is vice pure and simple—if I may be permitted to use the word "pure" in this connection. These men cannot be cured with medicine because there is no physical disease to treat. They can cease drinking whenever they wish to do so. It is the confounding of these patients with alcoholics which has caused so much confusion of the whole question. They have no right to be considered as alcoholics at all. One cannot expect the public to discriminate between the man who takes alcohol deliberately

and those who take it because they cannot help taking it. There is no outward sign to distinguish one from the other. To-day the Government fosters the same idea by its punishment of both classes. It is just as great a crime to send an alcoholic to prison as a punishment for his drinking as it would be to send a man to prison for eating when he is hungry, or sleeping when he is tired. Punish those of class 4 as much as you like, provided you can thereby induce them to reform, but to apply the same rule to the alcoholic is to admit complete ignorance of the whole subject.

Treatment by Travelling

This is a favourite method with many doctors. The usual thing is to send a patient on a long voyage in a sailing vessel, either for one or two years, in the hope that the healthy life and the long periods between ports will enable him to regain control of himself. Whatever good there may be in it is completely lost if the patient is sent on a steamer. The life on the latter is more likely to turn a moderate drinker into an alcoholic than to cure him. Like all other treatments, it has some merit in it. Let us examine its merits and demerits for a moment. Let us take the

case of a patient sent on a sailing ship first. What class are we to send? Class 4 is ruled out at once; theirs is a question of morals, and one does not send any one to sea to improve their morals. Class 3 is also ruled out, as one does not send maniacs to sea. There remain classes 1 and 2. In class 2 the periods may synchronise with the arrival at ports; if this should happen in even a small number of landings, it will completely annul all the advantages otherwise gained. Alcoholics of this class do not drink during the intervals between the attacks; indeed, many of them absolutely refuse to do so. Therefore they might as well be at home, for any advantage to health gained through the interval is lost during the attacks. Another factor in the case must not be lost sight of, and that is the peculiar effect of the sea on most men when on sailing ships, namely, a very strong desire to take alcohol to excess as soon as they land. The sudden change from the monotonous life to that of the activity of the port may be the cause, or it may be due to some peculiar effect of the sea air. It does not matter which, the fact remains that it is a well-known result of such a life, and consequently it is a factor which must be reckoned with. If this be true of class 2, how much more will it apply to class 1, for here we have a man who has a craving

which never leaves him and which temptation makes irresistible. Is it likely that he will escape when the results are so disastrous to non-alcoholics? Surely this is expecting miracles. If we now consider the case of those travelling by steamers, we have to reckon with two additional factors, namely, the more frequent ports of call and the notorious smoking-room life. I have crossed the Atlantic thirty times, and I have always felt sorry for alcoholics whom I have met at sea. At the same time I could not help feeling much more sorry for the friends at home who were expecting to see the patient return benefited by the trip. The life aboard steamers lends itself in some peculiar way to drinking. There seems to be some inducement for men to let themselves go when on board. Many of the clergy are peculiarly liable to this effect of sea life; I have seen members of the cloth carried to bed night after night, helpless, whom their wives declared were always sober men at home. I have met some of these very men a week or two after their landing, and found that they had quite dropped their excesses. I well remember a man who had been so bad that the captain was compelled to give orders that he was not to be served with any more drink. For several days he was as drunk as usual, and no one could tell where he obtained

his alcohol. Finally, it was discovered that he used to fish it up from the store-room through a ventilator at night. If the captain should stop the grog of a passenger, he often obtains his drink through the kind offices of a fellow-passenger. With proper treatment and supervision the sea trip may be a very useful help ; without these it is in my opinion worse than useless.

The Fruit Treatment

There is not much of interest to be said with regard to the fruit cure. Like all other methods of treatment it has its virtues ; by regulating the system and cooling the blood, it lessens the accumulation of toxins and consequent nerve irritation and depression. This may be successful in very slight cases in preventing drinking, and in some advanced cases in lessening it. As a cure in itself it is impossible ; as a help to other treatment it is valuable and should be used whenever possible. Before leaving the question of the fruit treatment, I would like to refer once more to the marvellous power of lemons to rapidly destroy the toxins in the system. I have seen the hard, dry, brown typhoid tongue and the heavy mental depression with their muscular weakness and loathing of all food melt away like

magic in a few hours under the use of strong, freshly-made lemonade. It is obvious that such a powerful aid should not be neglected in any well-considered scheme of treatment. Fresh lemon juice was very popular once as a treatment in case of acute rheumatism, and has well-known anti-scorbutic properties. These effects are not found in the citric acid alone. The fruit must be fresh and the drink freshly prepared to be of service.

Treatment by Colonies

A great deal of money has been spent and labour given in a well-meant effort to reclaim the alcoholic by means of farm colonies. One cannot help admiring the devotion and enthusiasm of many engaged in this work, but, knowing the results obtained, one entirely deplores this misuse of both time and money, which, if used in the right way, would have been of such lasting benefit to so many alcoholics. Value for money spent is not obtained and never can be under the present system. The whole movement is based on a wrong principle, and consequently must fail in its object until such time as this may be brought into harmony with our present knowledge of alcoholism. Like the foregoing treatment of alcoholism, this also has its virtues, and because

of these it is supported by its patrons. Its supporters believe that alcoholism may be cured by placing the alcoholic on a farm, the work, food, and moral training being regulated to suit the case. The result of such treatment is the improvement both of general health and the moral tone, to implant hope in the hopeless, and to induce others to change their vagaband life for a useful one. These are all very desirable objects, but touch only one phase of alcoholism ; that is the voluntary or vicious drinker. By improving his health and morals and inducing a more regular life, he may be led to give up alcohol ; but this man is not a true alcoholic, and I do not believe that a genuine alcoholic can be cured by such means ; the mere improvement of the general health and morals alone will not remove the craving for alcohol, and so long as the craving remains there can be no cure. Where a genuine craving has existed in patients on farm colonies and the patients have been benefited by their stay there, it is only a case of reduced craving and not a cure. Any restraint put upon the patient will break him down, allowing full play to the disease within him. Almost all of these patients relapse under a strain. Although this method of treatment will not cure real alcoholics, there are many suitable for such treatment.

Many drink to excess from a desire to drown their misery or despair. Place these on a farm colony and you may do good. There are a thousand in our jails who ought to be on these farm colonies instead. It is my firm conviction that no one ought ever to be sent to prison for excessive drinking alone. Nothing but harm can come of it. Let us look at the question more closely for a moment, and we will easily see why these farm colonies cannot cure alcoholics. The genuine alcoholic drinks because of a craving. If he belongs to class 1 this craving will be a constant factor, and unless he is placed under restraint he will obtain the alcohol he requires to satisfy this craving. He must therefore needs be a failure on a farm colony. If he belongs to class 2 he will be subject to periodical attacks, and, no matter how well he may be before the attack, he will resort to the drink on each return of the craving.

Treatment by Restraint

Any criticism of this method involves large issues—there are so many toes to be trodden upon that one cannot stir without being on some one's. First we have the Government with its jails full of alcoholics, of the majority of whom it may be said that their only crime is that they

are the victims of a physical disease. Then we have the old-fashioned homes where restraint is still believed in, Municipal Homes, homes in dreary remote parts of the country, etc. etc. One does not feel free to speak one's mind on this subject, but a simple statement of facts ought not to be objectionable to any one. Two things are aimed at in treatment by restraint, namely, the separation of the patient from alcohol and the improvement in his general health. The hope is that the improved health will spell increased will-power ; it is a sort of training of the will-power. To my mind there are two great errors in this system. The first is the attempt to separate the patient from alcohol by force—a thing which can never be successful while the disease is present ; the second is in attempting to train the patient to withstand temptation by shutting him away from temptation. With regard to alcoholics all experience teaches us that no amount of precaution will prevent a patient from obtaining alcohol short of absolute restraint, if he is afflicted with the craving. We also learn from experience that no amount of restraint will remove that craving. Therefore we must conclude that, touching the question of craving, restraint leaves the patient at the end of his imprisonment just where it found him. I am

quite prepared to admit that the patient may leave the home in a better physical condition than when he entered it, but the question at once arises, Is it necessary to lock up a patient for from two to seven years in order to merely improve his health ? Again, we must not forget that patients with the most robust health drink as freely as others, so that the mere improvement in health will not in itself prevent drinking in those afflicted with the craving. If we admit this, and the evidence of it is abundantly about us, all reasons for placing patients of classes 1 and 2 under restraint disappear. With regard to the voluntary drinker, I cannot see what is hoped for from placing him under restraint. It is admitted that he can take it or leave it alone as he pleases, that the question of craving does not enter into his case, and in most cases he is in good health. What then can restraint do for him ? With regard to these three classes, I have shown that nothing good is to be hoped for from restraint, but much remains to be said with regard to the harm which may follow such imprisonment. In all homes there are always a number of chronic " wasters " who are placed there just as others are sent to the Colonies, to be out of the way ; and daily association with these men must have a demoralising effect. Shut up against their will,

they are just in the mood to be influenced by the distorted views of the wasters. Some of these views are absorbed for life. They also learn to loaf and gamble, and some from that time become chronic loafers.

With regard to the dipsomaniac, these homes offer the very best means of placing him under proper restraint. These patients should not be treated without some resort to restraint, and the homes offer the very best opportunities for this treatment. While these homes are the best place for such patients, restraint alone will not cure them, but of this we will speak later on when we describe the question of drug treatment. To sum up, we find that restraint is useless in classes 1, 2, and 4, but necessary in all cases of dipsomania. We further find that it is very likely to prove harmful in many cases of the former classes. All this is true of the ideal home, but what about the great majority of homes which are anything but ideal? There are homes in this fair country of ours receiving alcoholic patients for treatment which are not only devoid of moral influences but which have a strong opposite influence. Not only is the alcohol not kept from the patients, but it is given to them in order to get the patient to remain longer in the home. These are the worst homes, of

course, but even in some of the better-class homes the patients are often able to obtain drink at times, simply because it is impossible with the limited staff kept to prevent it. The many ways in which supplies may be obtained would fill a book, but I will mention a few in order to show how impossible it is to prevent it in most of our homes.

Some homes offer boating and fishing facilities, and the patients arrange to have the bottles attached to a float, and when boating are able to secure them under the very eyes of the officer in charge. Another favourite method is to fish it up over the wall when brought by the only too willing go-between. With the limited staff so often kept, it is impossible to watch all parts of the grounds at once, and men who are bent upon getting alcohol and who have nothing else to do will outwit the very best watching. There is only one possible plan, and that is to make the patient absolutely indifferent to the alcohol. By my method of treatment the patient requires no watching; on the other hand, I often place a small bottle of whisky in the patient's bedroom and tell him to take it if he feels he wants it. It is as useless to attempt to watch an alcoholic patient as to look for a needle in a haystack, and it is always a pitiful sight to me to see the hopeless

attempts made by friends or relatives to prevent the patient from obtaining it. It is always a losing game for the watcher, and in the end nothing is gained, for if the patient is an alcoholic with a craving he will gratify that craving as soon as he gets the opportunity. The only sensible thing to do is to destroy the craving, and the necessity for watching will disappear. To sum up, then, we find that while restraint is very little good in classes 1, 2, and 4 it may prove to do great harm.

There has always been a treatment of alcoholism by means of drugs, even from very early times, but none of these removed the craving; they merely helped the patient to recover from an attack, and at best were only palliatives. None of them struck at the root of the trouble. The drug treatment which I have used for twenty years goes to the very core; it removes the craving. Unless one can remove the craving one is only playing with treatment — any treatment which does not aim at the destruction of the craving not only fails to cure the patient, but is likely to so discourage him as to prevent him from trying other treatment. Apart from this, it is also useless waste of time and money. All former drug treatments were of this nature, and were therefore largely responsible for the universal belief that once a man became

a confirmed alcoholic, nothing short of a miracle could save him from the alcoholic grave. It is therefore of the utmost importance that the first treatment of the patient should be a sound and scientific one, offering a reasonable expectation of an entire cure. The treatment which I am about to describe is such an one. The modern drug treatment is curative in a very large proportion of all suitable cases. The old treatment has largely depended upon circumstances quite apart from the action of the drugs administered for a small number of its successes, while there is no doubt about the result of the modern in all suitable cases. This is a strong statement to make, but it is made on the experience of twenty years, and I expect to justify this statement when I come to the question of the actual results obtained.

Its Range of Application

The next question of interest is what cases are suitable for treatment by drugs. It is most important to know when to administer the treatment and when to refuse to do so; to apply it indiscriminately to all cases offered for treatment is not only to court failure but to discredit the treatment. When I first used the treatment,

I hoped for success in every case, but I soon learned that everything depended upon the class of patient treated. I therefore devised the rough classification adopted in this book. If we examine this classification, we will find that in the first, second, and third classes the patient has a craving, while in the fourth class he has not. The treatment should be applied in all cases where the patient has a craving for alcohol, therefore one may hope for success in classes 1, 2, and 3; it is useless to expect success in class 4, for there is no scope here for drug treatment. Not only is this the case, but the presence of such a hopeless patient is demoralising to the other patients in the home. In order to understand why a treatment for which such definite results are claimed can be modified by an unfavourable influence, we must examine more closely the question of classification. In a disease of this nature, no classification can be perfect, and a short experience will teach us that there is a certain proportion of cases which are a combination of classes 1, 2, or 3 with class 4, *i.e.*, they are not purely physical, but are partially alcoholics and partially voluntary drinkers. Presuming that all voluntary cases are refused treatment, it is from the mixed cases that any failures will occur. It will be apparent to all that this combination

of vice and disease will vary with different cases, and just as vice or disease predominates so will failure or success follow. It is manifest that in all homes there will be a certain number of patients of this mixed class, for it is impossible for any doctor to tell at first the exact character of such cases. They require something more than drug treatment, and are therefore subject to disturbing influences; this question will be elaborated later on. The treatment is unsuitable for all of class 4 and all those of the mixed cases in which vice largely predominates over disease. It is always difficult to make a correct selection of suitable cases from among those of a mixed nature. The plan I have usually adopted is to question the patient carefully as to his desire to be cured. If this is satisfactory, and is corroborated by his friends, I do not refuse treatment, but even then one is liable to be misled, for some patients wish for treatment not with any desire to be cured, but from other personal motives. Such patients may or may not prove curable. The different motives which influence patients to seek treatment may be judged from the following cases. An army captain led me to believe that he desired to be cured; when leaving he told me that he had no intention of remaining a teetotaller, as he merely

took treatment in order to enable him to pass the examination which he had to undergo before he would be allowed to return to his command in India. Another patient desired treatment in order to be accepted in marriage—another in order to retain his situation. Some wish treatment in order to avoid disinheritance, and others merely to please an anxious parent or wife. There are many other reasons why patients wish to deceive the doctor; even with great experience and the most careful examination, a certain number of patients must be taken on trust. The doctor should always reserve the right to dismiss such cases from further treatment if he finds on closer acquaintance they are not suitable ones.

Having accepted the patient for treatment, the next thing is to prepare him for the regular course; this is accomplished by means of drugs and advice—both are essential to success. If we are wise we shall not neglect either, especially the advice.

The Drug Preparation

Unless there are reasons for acting otherwise, it is advisable to administer a mercurial followed by an alkaline purgative; 4 grains of calomel at bedtime and a Seidlitz powder the next morning

is useful. If the patients should object to using the Seidlitz powder (as they sometimes do), this may be replaced by ½ oz. of sodium sulphate. The failure to get satisfactory results from Seidlitz powders is often due to an improper preparation, for many persons do not know how to use such a simple thing as a Seidlitz powder. The Seidlitz powder should be a double one, it should be taken at least half an hour before breakfast, and the patient should move about afterwards and not lie in bed. The method of mixing it is also important : in two-thirds of a tumblerful of warm water (blood heat) dissolve the blue powder thoroughly, then add gently the white powder, so as not to cause the mixture to overflow the glass. Allow the effervescence to subside completely before taking. The general belief that it is necessary to drink while foaming leads to haste and waste. Many patients who fail to obtain satisfactory results from Seidlitz powders will find the above method of using a successful one. We can accomplish much good by such a simple preparatory treatment. The blood pressure is lowered, and the risk of cerebral congestion greatly lessened ; the whole intestinal tract is swept clear of the products of indigestion which generally accompanies the previous drinking, not the least important of these being

the large amount of toxins generally present Any excess of bile present is also eliminated. If the patient is liverish, it is further advisable to give 5-10 grains of salicylate of sodium an hour before the calomel; the result of this treatment is often very striking. Nerve irritation is markedly lessened; the pulse lowered, cerebral congestion greatly modified, and a general feeling of greater comfort induced. The patient is more likely to sleep well, while the system is prepared for what is to follow. But the greatest gain of all is the avoidance of delirium tremens. While it is not always possible to prevent the latter, this will do so in the majority of cases. I am quite convinced that neglect of such a simple precaution has not only prevented cures from being obtained, but has in some instances lost lives. If I seem to dwell unduly upon this point, it is because experience has taught me that there is no more important point in the whole treatment than this. One-half the battle may be gained in the first night's treatment. To my mind it is far more important than giving the patient a sleeping-draught, for it strikes at the very root of the insomnia. Sedatives are merely palliative, and do nothing towards removing the cause.

The Advice

If the preparatory purgation is important, the preparatory advice is still more so. But to give advice is one thing, and to get it followed is another. The doctor must first gain the confidence of the patient. Here so much depends upon the doctor himself. Some patients arrive at the sanatorium already convinced that the treatment is a good one, and quite prepared to follow any advice given by the doctor in charge; but these are few in number. On the other hand, there are many who arrive in quite the opposite frame of mind. The success or failure of their treatment may be decided in the very first interview with the doctor in charge. It is essential that he should believe in the treatment himself; it is just as necessary that he should be able to convince his patient of this belief. A sympathetic and tactful man with a fair knowledge of human nature will have little trouble if he will only give the necessary time. With some he will succeed in half an hour; with others it may require an hour, or often two; but whatever time is necessary it must be given. I have often given two hours of my time to a new patient before I could convince him that he had done the right thing in coming, and would make a satisfactory cure.

It is also necessary to remove any fears he may have with regard to the method of treatment. Tell the patient at once that there are no prison cells or padded rooms, that he will not be tortured in any way, and that he will not be suddenly deprived of alcohol. Inform him that he will not be required to sign any papers restricting his personal liberty. Having gained his confidence and removed his fears, he is in a condition of mind to listen to the advice which is necessary to his welfare. Instruct him in the rules and regulations, giving him a printed card of the same, if available. These cards should have the hours of meals and treatment on them. This is also important in order to prevent irregularity of attendance at treatment, for it is to be remembered that you are going to allow your patient great liberty. Next, advise him as to the importance of faithfully following the rules and regulations in his own interests. Some of your advice may seem trivial to a man of the world; have the patience to show him that your experience has taught you that it is not a trifling matter, but one essential to the success of the treatment. For instance, one of the rules will state that it is not permitted to smoke cigarettes during treatment. This to many may seem quite an unnecessary restriction; take

the trouble to explain your experience with regard to this, and do this with any question he may raise. The result will well repay you for any trouble you may take. If the patient should arrive in such a condition that he is unable to be advised, one ought to take the first opportunity of doing so. Pages of advice might be written with regard to these matters, but one cannot possibly stop to enumerate them here, but how important they may be the following will illustrate. On one of the bedroom doors at the Norwood Sanatorium there was a bolt on the outside, which was there when I took the house, and I did not have it removed for some time. Numbers of patients had used that room, and nothing of a special nature had occurred, until one night a certain patient was put into the room. He had arrived late, and I had not had time to have my usual talk with him. During the night he disappeared, and when found later on in London he told me that the sight of the bolt on his room door had so alarmed him that he got into such a nervous state that he felt he would go mad unless he could get out. Although an extremely nervous man, he was a very sensible one, and I was able to completely gain his confidence in a few minutes, and, having explained our method of dealing with patients, I had no

further trouble with him. It is best to set your patient's mind at rest before he has time to get into a panic through his fears.

Having gained the confidence of your patient, removed his fears, and also instructed him with regard to the rules, etc., and having administered the preparatory dose of drugs, you are now in a position to commence the first week's treatment. Before doing this I will mention the rules and regulations which experience has taught me to be necessary.

Patients were expected to be always on hand when medicine was to be taken. This occurred six times a day; they were required to attend three times a day for hypodermic treatment. The use of tobacco in any form but the pipe was strictly prohibited. They were not expected to leave the grounds for the first three or four days, unless they had permission to do so. Smoking was not permitted for one hour before to half an hour after the hypodermic treatment, and a very moderate use of the pipe recommended. The other rules were such as are to be found in all well-conducted homes. I have no objection to patients using the pipe in moderation, but those who do not use it make better progress. The use of the pipe close to treatment time has some effect upon the action of the drugs, which

I have never been able to discover, but which is quite marked. Cigars are prohibited on account of their well-known effects upon the nerves. Cigarettes must be absolutely barred if you wish to cure your patient. I only know of one patient out of over 2000 whom I have treated who was cured of his disease after persisting in using cigarettes. He was an exceptionally strong-minded man, and restricted his smoking to one a day. That the CO produced by the burning of the wrapper lessens the oxygen-carrying powers of the red blood corpuscles is well known, but why it should nullify the action of the drugs used I cannot say. That it is so I know, and I am so convinced of this that I make a rule of dismissing any patient whom I find persisting in the use of cigarettes after fair warning. Female alcoholics are more difficult to cure than males, but the female alcoholic who uses cigarettes is the most difficult of all ordinary alcoholics to cure, for the simple reason that it is almost impossible to get her to desist from their use. Further, it is a well-known fact that many periodical alcoholics who use a pipe between attacks will take to cigarettes just before an attack occurs. Aside from the benefit of the rules to the patient, their necessity for the proper conduct of a home has another

value, which is a very important one, namely, they enable the doctor to tell whether the patient is in earnest with regard to his cure or not. If he breaks the few simple rules which are formed entirely in his own interests, it is reasonable to conclude that he is not in earnest with regard to his cure.

The question of the condition of the patient on admission is an important one, and may as well be discussed here. Friends often ask if they ought to keep the patient at home until he is sober, or bring him while he is drinking. This depends on the patient ; if he is likely to change his mind as to treatment if he is allowed to sober up at home, it is advisable to start treatment while he is drinking ; but if not, it is far better to wait until he is sober, as it is more pleasant for all concerned at the sanatorium. Otherwise it does not matter.

The First Week's Treatment

Having decided to treat the patient and having gained his confidence, explained the rules, etc., advised him carefully and administered the preparatory dose, we are now in a position to administer the first week's treatment. If the patient is using alcohol at the time of admission,

it is advisable to administer sufficient to satisfy his craving for it—the amount will vary with the patient. One oz. of whisky, diluted, before each meal, with one at bedtime, will generally be found sufficient; if not, there is no harm in giving an extra ounce or so between meals. I find whisky the most satisfactory form of alcohol to use. Nothing is gained by varying the kind of drink in the majority of cases, but sometimes this is necessary. I will refer to this later on. If the patient has been drinking much just before admission, it is advisable to leave 4 oz. with the night attendant in the event of its being wanted. If he is not bad enough to require any attendant it may be left with the patient himself, with instructions to use it if he feels he must. The mere fact that the patient knows he can have it if he wishes often sends him to sleep satisfied, when otherwise he would lie awake from sheer nervous dread of not being able to get it. There is nothing to be gained by cutting off the alcohol suddenly, while much harm may be done. I know of one hospital where they make a rule of refusing all patients any alcohol whatever from the time of their admission; the average of deaths from delirium tremens in that hospital is very heavy indeed. The treatment will very soon regulate the demand for the stimulant; a few hours of

treatment and the patient soon loses his craving. I have seen many patients who would take any amount offered them the first day, who could not take any the second day. In four or five days the most thirsty will refuse it, while to some it will become absolutely repulsive. So much is this the case, that a number of them not only cannot take it themselves, but cannot watch others take it without being sick. Therefore we need have no hesitation in letting the patient have enough to satisfy his craving.

For the first week's treatment we require the following, namely:

One good hypodermic syringe.
A supply of Schimmel's needles with a separate butt for each patient.
A steriliser.
One pair of $\frac{1}{2}$-oz. glass-stoppered bottles with wide mouths for each patient.
Some cotton-wool, and a bottle of $HgCl_2$ in alcohol, 1 in 1000.

The bottles should be labelled with the patient's name or number, each patient having a pair to himself. One of each pair of bottles will contain a solution of nitrate of strychnine, the other a solution of sulphate of atropine. It will be found advisable to prepare the solutions oneself. The following is the plan I have found the least

troublesome and most satisfactory. The nitrate of strychnine is carefully weighed into 4-grain powders. One of these is placed in a 2-oz. test-tube (the wider the tube the better, as a narrow one is apt to boil over) and 9 drams of aqua dist. is gradually added in such a way as to completely wash down any crystals of the strychnine which may be adhering to the side of the tube. This is most important, as one may learn to his cost if the caution is neglected. The liquid is well boiled for three or four minutes in order to thoroughly dissolve the strychnine and to sterilise the preparation. The solution may now be cooled at once by allowing cold water from the tap to play on the side of the tube, or it may be set aside to cool. A plug of cotton-wool properly fired should be placed in the mouth of the tube. When cool the solution should be filtered, using two filters. Both bottles and funnel should be thoroughly sterilised. The preparation should measure exactly 1 oz., or be made to do so in the ordinary way. It is important that the preparation should not be filtered while hot. No preservative should be added, for it is far better to depend entirely upon the proper sterilisation. The sulphate of atropine should be in 1-grain powders. One of these should be similarly placed in the test-tube. The water should be

sterilised first, then cooled, before it is added to the drug. Well dissolve in cold water of the strength of 1 grain to 1 oz. If the patient has been prepared for treatment he is given three injections daily in the arm, as follows: A pledget of cotton-wool is wetted with the solution of $HgCl_2$ in alcohol, and the patient's arm well rubbed with it at the point where it is intended to make the injection. Then having drawn 1 minim of each solution into the syringe, and having carefully excluded all air from it, the injection is made in the ordinary way. The injections are given just after the three chief meals. The dose is gradually increased during the week, the nitrate of strychnine rapidly until $\frac{1}{30}$ of a grain is given at each injection; the sulphate of atropine is pushed till the physiological effects are produced, namely, dry tongue and dilated pupil. It is not necessary to push it to the extent of producing delusions, although by so doing a still better effect is produced, but the comfort of all concerned is so greatly increased by not doing so that I do not think the results warrant it. For one whole month I tried excessive doses of the atropine, with the result that I had six cases of delusions in one day! The delusions themselves were harmless enough, but entailed an enormous amount of extra work and strain upon the staff. Each

patient should have a needle and a small bottle of each solution set aside for his use only. The rusting of the needle when in the steriliser may be avoided by placing it in an oil bath. If these precautions are taken, one never sees the smallest reaction at the site of injection. In addition to these injections the following mixture is administered six times a day :

Liq. cinchona (Fletcher)	.	℥ x.
Liq. gentian ,,	.	,, xv.
Liq. rhei ,,	.	,, ii.
Liq. capsici ,,	.	,, i.
Sulphate atropine sol.	.	,, ii.
Nitrate of strychnine sol.	.	,, ii.
Glycerin q.s.		
Aq. to 1 oz. ;		

give in half a glass of water.

In order to administer this treatment without confusion, it will be found necessary to have fixed hours for meals and treatment. The following will answer well :—Breakfast at 8.30, lunch at 1 o'clock, tea at 4.30, and dinner at 7 o'clock. The hours for medicine would be 8 and 10.30 a.m., 12.30, 3, 6.30, and 9.30 p.m. Injections at 9.15 a.m., 2 and 8 p.m.

Diet during this week is important. Many of the patients require no special diet ; others regain their appetite within twenty-four hours

under this treatment. With regard to those who cannot take ordinary food it is largely a question of treatment on general principles. Hot Bovril well seasoned with pepper is useful. Milk and soda-water or milk with the alcohol allowed is also useful. Horlicks' malted milk may be tried. Sanatogen will often be found of distinct benefit when other diet fails. Predigested foods of various makes may be tried. In persistent vomiting one of the most valuable remedies is freshly-prepared lemonade; it should be made strong and should always be prepared from fresh ripe lemons. In those cases where the tongue is dry and thickly coated, with a small rapid pulse and no appetite, it sometimes acts with surprising rapidity and is well worth a trial in most cases. Where there is gastric tenderness with vomiting the following will be found useful:—

Sodii bicarb. . . .	gr. x.
Bismuthi carb. . . .	,, x.
Aq. menth. pip. to . .	ʒ ss.

every six hours.

Sp. ammon. arom. . .	℥ xv.

may be added to this if the pulse is weak. The treatment of delirium tremens cases will be considered later.

Second Week

Having reached full doses of the injections during the first week, the doses should be maintained throughout the second week. The mixture should be given as in the first week.

The Third Week

If the progress of the patient has been satisfactory, the dose of the atropine is now rapidly reduced until the sixteenth day, when it is omitted from the injections. At the same time the tincture of capsicum is withdrawn from the mixture.

This treatment is then continued during the fourth week. At the beginning of the fifth week the atropine is withdrawn from the mixture, which is now given four times a day instead of six; otherwise the treatment is administered as before.

During the sixth week the strychnine injections are rapidly reduced until nil, and are only given twice a day, morning and evening. At the beginning of this week the cinchona is also withdrawn from the mixture, the latter being now given three times a day.

I have now outlined the course of treatment

which I would adopt in an ordinary straightforward case devoid of complications. If this were all we had to do in order to cure our patients, the matter would be simple enough, but unfortunately it is not; much more must be done if success is to be obtained. It is quite true that the above treatment faithfully carried out will effect a cure in a number of cases, but by itself will fail in many others which ought to be cured. In 1904 I gave an outline of this method of treatment in the *British Medical Journal.* Judging by my correspondence, it was evident that the treatment was being tried all over the world. While some wrote thanking me for publishing the treatment and stating their success, others wrote asking why they had failed in curing their cases. The reason must be obvious to all thinking medical men. Alcoholism is a disease arising from many causes and associated with many complications, and a thorough knowledge of the subject is essential to success. Patients must be studied and understood, and the cause of drinking ascertained in each case, and remembered throughout. Personality, tact, and judgment must play a part. It is not to be expected in this, any more than in any other disease, that routine treatment unaided by skill and experience will be successful. Every new treatment placed

before the medical profession has had to go through the same experience. Many try these without the necessary experience, fail, and then condemn the whole thing. If this is true of new treatment in ordinary diseases, how much more likely is it to be the case in such a complicated disease as alcoholism? The above treatment may be termed basal treatment, upon which must be built a special treatment to suit each individual patient's requirements. Skill and experience in applying the treatment must be acquired by the doctor before he can hope for success in the majority of cases, and it is for this reason that the treatment can never be as successful in the hands of a general practitioner as when administered in a home by one who makes the subject a life-study. There are many cases so situated that it is impossible for the patient to go into a home, and the general practitioner must necessarily do his best for the patient. These I wish to help treat their cases successfully so far as it lies in my power, but if they fail they must not blame the treatment but the want of the necessary skill and environment.

Let us first see what may be done to help a patient outside the routine treatment. Having classified your patient, you must be in a position to know the cause of drinking. Every alcoholic

has an internal cause. Is there also an external cause? If it lies in your power to remove this, you must do so. If it is in the power of his friends to do this, you must insist upon their doing so. In order to cure the patient it is not enough to remove the craving. You must see that all inducement to indulge is removed also, if possible. Therefore every effort must be made to leave your patient as little handicapped as possible in the fight which he will have to make. Let us take an instance to show what I mean. A man oversteps the boundary in social drinking two or three times. His wife is unwise in her method of remonstrance. The result in some cases is to arouse opposition, together with a determination to persist in his course. After a time he develops a craving; he is soon incapable of stopping without help, but the wife has no means of knowing this. Treatment will remove the craving, but the wife must be shown where she made the mistake, and instructed how to help rather than hinder in the future. If such a patient returns to a home where he will be constantly reproached with the past, unless he is an exceptionally strong-minded man, and has his lesson well learned, he is sure to relapse. Let the wife learn the real nature of alcoholism, and in nine out of ten cases she will help instead

of hindering. What applies to the wife applies equally to parents, relations, and friends. Advice here may make all the difference between success and failure. I have seen many cases corroborative of the above. There is another direction in which something more than treatment is required. Let me illustrate this by an object-lesson which I met with early in my career as a specialist. I was in a lift in a public building, which also contained a very frowsy-looking man. Now doctors are sufficiently experienced in such cases to enable them to meet them without showing their disgust, but this unfortunate man was so exceptionally dirty and unkempt, that I shrank into the farthest corner of the lift from him. Half an hour later my friend to whom I had related my experience gave me the man's history, and asked me if I would undertake his treatment. His history was a very sad one. He had once been a prosperous merchant, but drink had gripped him at the death of his wife. Failing to master the craving, he showed his noble disposition by converting the remainder of his funds into an annuity for his daughter, which would ensure her from want and provide for her education. He then left for Canada, where he hoped to make a fresh start in life, but with the result too often met with. He told me that his

position had become so intolerable to him that he had tried several times to take his own life, but never could find sufficient courage to take the fatal plunge. The problem which immediately presented itself to my mind was—what is to be done with such a man after treatment? He was absolutely devoid of all prospects for the future. I considered it useless to treat such a man, and then consign him to misery and want. My friend then undertook to see that he would get a fresh start after treatment. He was cleansed, robed, and treated; he was then given a new start in life. Some months later I met a well-dressed, prosperous-looking man, whose face I could not place although it seemed familiar to me. He stopped me and told me who he was; I could hardly credit the fact that the well-dressed, genial-looking man before me was that same man from whom I had shrunk in the lift. I accepted an invitation to visit his rooms, and was both astonished and pleased with what I saw. Good taste and refinement was evident everywhere. This was the man who had been brought so low by drink that he had been sleeping for months on filthy straw in a disused stable, unkempt, unwashed, and dressed in filthy rags. It was as necessary to give him a start in life as to give him the treatment. There is a part for the

doctor to do and a part for the friends to do; the doctor cannot do it all and the friends cannot do it all; they must join forces if they wish to be successful.

I make it a practice to have an hour's talk with each patient during his treatment, in order to point out the object and end of the treatment, to warn him of the pitfalls ahead, and to give him such general advice as I consider most useful to him. The nature of this advice will be evident when I come to describe the results of the treatment.

Let us now follow an ordinary case through the course of treatment and see what happens. The patient will in three or four days lose all desire for alcohol, and will of his own accord cease drinking. By the end of the first week he will be sleeping well, and eating with a very fair appetite. By the end of the second week his nervousness will be gone in most cases, and there will be still better appetite and sounder sleep. From this onwards there ought to be a steady and rapid improvement in all directions, and during this time he has had practically no curtailment of his liberty.

Let us now look at a somewhat different case. We will presume that the patient is under treatment, but has not quite made up his mind that

he wishes to be cured. Nothing may occur to indicate this until during the second week it is felt that the patient is not making the progress he ought to be making. There are always indications of this to the experienced eye. The patient is then watched, and found to be tampering with alcohol. The question at once arises—Are you to refuse further treatment or try special means to save him? I am always in favour of the latter, as experience has shown me that many good cures have been made in such cases. The first thing to do is to find out the reason why the patient is acting thus. Some patients imagine that they are going to be able to drink in moderation. Any such idea must be corrected at once. Some patients make an experiment during treatment in order to see if they can drink. These should be warned against such practices, and told to await the result of the treatment. Then there is the patient who will openly ask to be cured, secretly determining not to be cured. Where advice fails the following may save the patient: rapidly push the atropine until $\frac{1}{50}$th grain is given three times a day, and insist upon the patient taking several heavy drinks of his favourite form of alcohol. He will probably be very sick, and nothing more may be required. If he should not be sick, it is as well to ensure

his being so by giving an injection of apomorphine just before he is given a drink. This may be repeated two or three times in obstinate cases. Sometimes this has the happiest result. One of the best cures I ever made was a man to whom I had to administer this treatment three separate times. He afterwards told me that he drank from sheer determination to defeat my efforts to cure him. He has now been cured twenty years, and never meets me without telling me how thankful he is that I did not give him up. With others it will fail; these are always mixed cases in which the vice greatly exceeds the disease, and it is hopeless to expect a cure at this stage of their drinking. Later on in life, when the disease has progressed to a greater degree, they will be glad to avail themselves of the treatment.

Other patients will present themselves for treatment, whose physical condition is such as to call for special treatment. For instance, the cause for drinking in some families is found to be a diseased condition of the sexual organs. Obviously this must be corrected if we wish to succeed. Others will be found to be suffering from neurasthenia; one of the most potent remedies here is high frequency. Twenty minutes a day on the condensation couch for three or four weeks will make all the difference between success and failure.

Certain gastric conditions are sometimes found to be causes of drinking. High frequency here also proves to be of the greatest value. In others chronic rheumatism and neuritis will often yield to this form of treatment. In fact, every means must be resorted to in order to remove any ascertained cause.

The Treatment of Delirium Tremens

I have already stated how this may be prevented in many cases, but sometimes we must deal with it. I do not agree with the late Norman Kerr that it is safe to at once cut off all alcohol. I am convinced that many cases of delirium tremens are thus precipitated which might have been obviated. Some patients arrive in this condition. Three things must be aimed at, namely, reducing the cerebral congestion, feeding the patient, and inducing sleep. If the cardiac condition will permit it, the purgative treatment already mentioned should be administered. Whatever alcohol is given should be given in milk, and feeding along the lines already mentioned should be tried. To induce sleep it is useless as a rule to administer drugs by the mouth. Very often they are not absorbed for hours, and then if repeated doses have been given one may have to

deal with a case of poisoning. One of the best and safest methods is to give a hypodermic injection of morphia, one-half a grain, with $\frac{1}{200}$th of a grain of hyoscin. This will often produce a calm sleep for hours. The patient will wake up quite rational, especially if he has been well purged as above. Apomorphine is a drug which has lately gained a considerable reputation for its effect in these cases. It should be injected in one-half the ordinary doses. I think it has a future before it. I also think the smaller doses have as great an effect as the larger doses, and there is less risk of straining the already weak heart. One has always to remember that fatty degeneration of the heart is often a complication in these cases. As soon as the patient has become rational the ordinary treatment may be given.

We now come to the question of proper diet. This treatment develops a remarkable appetite, and the tendency is for patients to eat too much. Therefore the meals should be plain with plenty of fruit. Oatmeal porridge and fruit should be part of every breakfast. This will help to correct any excesses. Too much meat is not advisable, and it is as well to omit such vegetables as cause indigestion. In the warm weather plenty of lemonade should be served; there should always

be apples, oranges, or grapes at dinner. Pickles and highly-spiced sauces should be omitted; suppers should not be allowed during treatment, even though the patient has always been used to them. What virtue there may be in fruit beyond its cooling effect upon the blood and its regulating effect upon the system, I am not prepared to say. Some claim that it has a stimulating effect as well; this I think is true, but of one thing I am certain, and that is that patients do better on fruit than without.

Exercise should be very light for the first ten days, as the patient is easily fatigued at this time. During the rest of the treatment he should take plenty of exercise every day if he is inclined to avoid it; every day he should be asked to walk a certain distance, or if the weather is unfit for walking a game of billiards will help, but the patient should not be allowed to sit about too much. Gardening in moderation is an excellent form of exercise if the patient can be induced to take an interest in it.

If you wish to do the patient the most good, get into sympathetic touch with him at the very beginning of his treatment. Morally he will be a lame dog for the first two or three weeks, and will need helping over many stiles before this lameness leaves him. When he understands

that you have a sincere kindly interest in his welfare he will readily listen to your advice. The personal element must enter very largely into the question, from the very nature of the disease. Much more depends upon the personal character of the doctor administering the treatment than might be supposed. This is an important point and well worth while looking into. Let us suppose that two doctors are treating two alcoholic patients of an exactly similar type. The patient's history is correctly taken and recorded—the treatment is precisely administered throughout. The doctor is uniformly courteous to his patient ; he may even be of a statistical turn of mind and keep a perfect record of history—doses, pulse, temperature, etc. ; but he fails to cure his patient. The other doctor has a similar patient to treat ; he establishes a sympathetic bond between the patient and himself during the first hour the patient is with him. From that moment to the completion of the treatment the patient will be led to see that the doctor takes a deep interest in him, and is sincerely anxious to make his case a success. This induces the patient to confide in the doctor, with the result that the doctor is able to do much more for him than otherwise would be the case. The patient's troubles, failures, and weaknesses

are laid bare, enabling the doctor to give him the advice and help which is so necessary to success. His suggestions and advice are well received and followed, and he cures his patient. The personal element alone has decided the result.

Doctors have often asked me, "Do you use suggestion as a means of curing your patients?" Most doctors use suggestion in the treatment of their cases, deliberately or otherwise; it is a valuable aid, but is not a main factor in the treatment. That cases can be cured without any suggestion the following will well illustrate. Some years ago the family physician of a wealthy patient asked me if I would undertake charge of the case, but expressed a wish that the object of the treatment should not be disclosed to the patient. To this I assented, and I was introduced as a nerve specialist. The patient was to be treated in his own home. Thinking this an excellent occasion for testing the part played by drugs alone, I deliberately refrained from making any suggestion whatever. The patient had been drinking to excess daily for months, and had not left the house during that time. He would lie all day on a lounge with a bottle of whisky and syphon of soda by his side, and was never sober. I decided to let him do as he pleased, providing he would allow me to administer the

treatment. Telling him that his nerves were out of condition, I asked him if he would permit me to try and put them in order. Having obtained his consent to this, and having made friends with him, I commenced treatment. On the third or fourth day I noticed that he was quite sober, and that the whisky and soda had disappeared. The next day it was still missing, and I said to him, "I notice that you are not taking any alcohol now! How is that?" "Oh! I had to send the d—— thing away. The very sight of it made me sick. Even to think of it makes me feel ill." That was the last drink. It was not till the last week of treatment that he found out what he was being treated for. Now this was not a case of periodical alcoholism. With regard to suggestion I may say that I use it as an aid to drug treatment, and often find it of great help in cases of weak will-power, but I have no experience of its use by itself as a cure for alcoholism. I can quite understand its being of the greatest help in cases of class 4.

The Treatment of Periodical Alcoholism

The first consideration is, when should the patient be treated—during the attack or between the attacks? With regard to results, I do not think it matters much which plan is adopted.

This being so, it is highly desirable to have the patient come for treatment between attacks. This is generally a difficult matter, as these patients invariably insist, on recovery from their attack, that they never intend to touch it again, and they are most difficult to persuade to the contrary ; hence the difficulty of getting them to take treatment when sober. As a result, the majority of cases are treated towards the end of an attack. The treatment recommended for class 1 will be found equally useful in these cases, but the doctor in charge will be confronted with a difficulty which does not obtain in the treatment of class 1. He has no index of the effect of the treatment upon the craving, for it must be remembered that these patients have no craving between the attacks. In many cases they have a well-marked feeling of revulsion with regard to alcohol. While in class 1 the effect of the treatment may be readily watched, here the doctor has no guide whatever. Perhaps I ought not to go so far as this ; it would be better to limit that statement to those who have only a moderate experience in the treatment of alcoholism, for those of long experience acquire a faculty of determining the progress of the patient in these cases. This change has to do with his physical progress. It is very difficult to explain what it is, but it is there in all successful

cases, and it is not in all others. In class 1 the destruction of the craving is always accompanied by an improvement in the moral fibre of the patient. One would naturally expect a similar improvement in cases of class 2, where the cure was working satisfactorily. This may have something to do with it, but if it has, the change is so delicate in nature that it is not obvious to men who have not been trained to look for it. It is well to remember that these patients are the most optimistic of all alcoholics, and their assurances must be well weighed and discounted heavily. There is one feature of these patients about which I would like to say a word. After an attack has run its course, the patient suddenly announces his intention of reforming, and takes great credit to himself for this resolution. His friends are delighted, and are led once more to believe in his promises. These sudden resolutions by a sobering up of the patients have led many loving wives and fond parents to persevere in their efforts of reclamation, deluding themselves that they are conquering the disease and will eventually save the patient. As a matter of fact they are doing the patient a great harm, possibly by delaying his treatment and running the risk of his becoming incurable. The patient's resolution to sober up is not genuine,

for the disease itself forces him to stop drinking. The drink becomes repulsive to him, he can no longer take it, and so decides to save his face; by his false resolution he deceives his friends, but not his doctor. As soon as the craving returns he will drink again as surely as the sun will rise, and the craving will return just as surely, unless it is destroyed by a proper treatment meantime.

Class 4.—I have already pointed out that alcoholics coming under this description are not fit subjects for medical treatment; there is no craving to remove. It is with this class of patient that the wife, parents, friends, or pastor may succeed; certainly it is their work and not the doctor's. Here I should emphasise the statement I have already made, that it is not only senseless and useless to lock these patients up, but positively harmful. To punish a man for any offence committed against the law as to his drinking, is quite another thing, but to attempt to cure him by locking him up is sheer nonsense. The results of all our efforts in this direction amply prove this. I am now referring only to those members of this class who, without the slightest excuse, deliberately get drunk. But there is another section of this class whose treatment must be different; I refer to those who drink from sheer misery. They have no craving to remove, but

there is a definite cause. If this cause is removed, they cease to drink.

We now come to describe the treatment of class 3. Dipsomaniacs cannot be satisfactorily treated without restraint—the risk is too great both to the doctor and the patient. I have nearly lost my life on several occasions through attempting to treat these patients without proper restraint. It is necessary to remember that although the mania has been brought on by drink, it does not differ from mania due to other causes. The patient may be either homicidal or suicidal. If the patient can be induced to take treatment, it should be on the distinct understanding that he may be deprived of his liberty whenever necessary; and for this reason the treatment ought to be carried out in a properly equipped home, where a padded room and strait-jacket are convenient. In the absence of mania, the treatment will be similar to that in class 1. If an attack of mania comes on, the routine treatment must be suspended, and every effort made to control the excitement. A purgative dose of calomel must be given at once, followed in eight hours by a saline cathartic. Whatever theory we accept as to the cause, such a preparation has a most marked effect. Aside from this, we thereby prepare the way for any

further treatment. To control the excitement, we may resort to several drugs. The bromides are often useful if pushed sufficiently, but I should not advise the use of any of the mixtures of bromides combined with other more powerful sedatives, as this limits the dose of the bromides. Bromidia is one of these preparations to which I have given an extended trial. In slight cases it acts very well, but I had an unpleasant experience several times on finding it increased the excitement even when pushed to the limit. With the plain bromide one has practically no limit to the dose one may find necessary to adminster. One-half grain of morphine with $\frac{1}{30}$th grain strychnine is often very successful. Veronal is one of the safest of its class; if this is tried, it is as well to remember that veronal itself must be dissolved in boiling water before administration unless the sodium veronal is used; otherwise it will not act for many hours afterwards, as it dissolves very slowly in the system.

Hyocine is another useful drug, either alone or in combination with morphine, but it must be used with great caution.

Perhaps the most promising drug we have is apomorphine, but I do not find it necessary to administer the large doses recommended by others. $\frac{1}{30}$th gr. repeated when necessary is

quite as successful, and much less risky. It should be tried in all cases where the cardiac symptoms do not contra-indicate its use. Again, it is well to remember that in all alcoholics, remedies which produce heart-strain must be used with great caution.

I have seen suggestion act in some cases in the most striking way. Owing to the great age of a patient and cardiac complications, I was much limited in the use of sedatives, and I decided to try suggestion. Seizing his hands, I suggested sleep, with all the concentration of mind I could, and to my astonishment the patient was sound asleep in two or three minutes. His sleep lasted for twenty-four hours, during which time he was aroused every eight hours in order to administer nourishment, when he would immediately drop off to sleep again. It was somewhat remarkable that he slept the exact time I suggested he should; but how much of this was due to suggestion and how much to the drugs administered, I am not in a position to say. I have often used suggestion, but never with such striking success as in this case. I will go further, and say that I have found it of such value in the treatment of alcoholism at various stages and for various purposes that I consider it essential to success in many cases. This applies more

particularly to the mixed cases where vice and disease go hand in hand. In these cases it is necessary to do more than remove the craving, and drug treatment and suggestion must go together. I am convinced that suggestion alone will not succeed with these patients, and I am equally convinced that drug treatment by itself will likewise fail. Patients vary in their susceptibility to suggestion. The effect on some is slight, while on others it is very marked. In one case I could control the patient at a distance —quite as well a mile away as close by.

General Results of the Treatment

We now come to the consideration of the results of the treatment. During the first week the patient's craving for alcohol disappears entirely, so that he may be allowed complete freedom. For many years I made it a rule to give the patient a 4-oz. bottle of whisky to take to his room at night, with instructions to use it if he felt so inclined. The percentage of patients in which it was used was small, and that always during the first week. The object of this was twofold. Many patients have been so long depending on alcohol in order to get to sleep that it is not easy to convince them that

they can sleep without it, and the mere fact that they have it by them, in case of need, will be sufficient to quieten their nerves, and so content them that they will go to sleep without it ; once they are able to experience this they no longer require it. It also is a fairly reliable test of the progress in regard to the craving ; the craving not only disappears rapidly, but in quite a large proportion of cases it is followed by a most marked aversion to alcohol. I have seen emesis produced in a patient instantly by merely seeing another patient taking a drink. This is exceptional, but many patients feel like vomiting if they smell the fumes of alcohol, and some actually do so. Other patients who have witnessed this are made uneasy in their minds, believing that the treatment has not been successful in their case, because they do not experience a similar feeling. When they have consulted me about it they always admit that they have no desire for the alcohol, but feel that they could take a drink without its making them sick. I always advise them not to try it, but to leave time to do the work. I give this advice for two reasons, namely, there are some patients in whom this result does not occur, and it would be very unwise for such to take alcohol. If it did not make them sick, and they were of the class which finds one drink

sets their blood on fire, the result might be unpleasant. The second reason is the fact that many of these patients find out, later on, that their revulsion to alcohol is present in their system. The following will illustrate what I mean. A patient was telling me that he had not experienced this feeling of revulsion to alcohol, and was quite concerned about it. I had just advised him to leave it to time, when he poured himself a glass of water, the weather being very hot, drank it—and immediately he was sick. I took up the glass and smelt it; he had used a glass which had contained alcohol. Five minutes before the patient had assured me that he had no aversion to alcohol, yet the effect of drinking water out of an empty glass which had contained it was to make him sick, and so much so that he could not eat any food for twenty-four hours. Having met with many such instances of the intolerance being there without the patient's knowledge of it, I always advise them to let time tell the tale. This intolerance is not a passing one, but is permanent, for it will be operative many years afterwards. The administration of the treatment should aim at obtaining the greatest degree of intolerance possible. It is not sufficient, in some cases, to produce a condition in which the patient merely feels he does not wish

for alcohol. The treatment must be pushed until he feels not only that he does not want it, but that he could not take it if he tried. This can be done in a large percentage of cases, if the treatment is properly administered.

With regard to sleep, it is astonishing how soon natural sleep comes back to the patient when taking the treatment. In 95 per cent. of cases I never have to administer a sleeping draught ; it is almost a routine expression of patients, after about three days' treatment, " I have not slept so well for months." In some this is so marked that they sleep one-half the day as well for the first week or two.

What has been said about sleeping applies equally well with regard to appetite. Many patients will take the first good breakfast for years on the second or third day of their treatment, and pass through the whole six weeks with a very keen appetite. The patient not only eats well and sleeps well, but also feels well. He will tell you that he feels ten years younger, and he certainly looks it. There is also a wonderful change in their physical activity ; men of indolent habits become energetic, and take an unusual amount of exercise, a common expression being, " I never get tired now." The whole physical system is built up and strengthened. I

have seen long-standing, complicating diseases disappear during treatment, such as chronic bronchitis, indigestion, constipation, nervousness, rheumatism, chronic headaches, palpitation, and even consumption have yielded to the treatment. This list reads very much like that of a patent medicine wrapper, but no doubt the explanation lies in the improved opsonic index, and the greatly lessened amount of toxins, while one can readily understand the action of the atropine and strychnine in constipation and chest troubles. The mental effect is often remarkable. Different patients will express the result in different ways. The statement of one of my very earliest patients was so striking that I have never forgotten it. He said he was like a man from whose eyes scales had fallen. He was a broker, and had always considered himself as clear-headed as most men; but the mental clearness which came to him with the treatment was a revelation to him. An accountant found that he could add columns of figures with a rapidity and certainty to which he had been a stranger for years; a stair builder, who had had to abandon his work before treatment on account of his frequent miscalculation, found that he could plan with as much certainty as ever after treatment. Doctors, lawyers, and literary men expressed the same

thing. In all this there is something beyond the usual effect observed when alcohol is withdrawn and tonics administered. That the atropine plays a part far beyond our present knowledge of it I am convinced, but what that part is I do not yet know.

I am often asked the question, "Is the effect of the treatment permanent?" The patient leaves the sanatorium with no craving or desire for alcohol; this condition remains permanent so long as no alcohol is taken. It is therefore an easy matter for any patient to remain a teetotaller if he has any desire to do so. He is placed in the same position as he was before he learned to drink. It is my usual custom to try and get a candid opinion from the patient before he leaves the home with regard to his desire for alcohol. Some of the replies are characteristic—such as, "I could swim through it and not want to wet my lips!" "I would as soon think of drinking ink!" "I would as soon think of taking a drink of poison." "An undertaker's window would be as attractive to me now as that of a wine-shop," or "The very thought of it makes me feel nauseated." The majority of patients express themselves in terms which mean the same thing. One may be excused for asking the question, "Are these statements

sincere ? " I have only to turn to the subsequent lives of these patients to know the truth. I have known patients to suffer the loss of near and dear ones without resorting to alcohol; others to lose all their money, suffer privation to which they had not been accustomed, and yet refuse to touch alcohol. Patients have refused to take it when, lying seriously ill, and it was ordered by the doctor in attendance, until I had been consulted. Two cases in particular will well illustrate this. One was that of a lady who had been treated three years before and had just undergone an abdominal operation. After the operation persistent vomiting set in, which had resisted all efforts to relieve. Those in charge of the patient decided to try iced champagne, but the patient firmly refused to take it unless they had obtained my consent. Even then the champagne had to be disguised before the patient could take it. This was done by perfuming some cotton-wool and stopping up the nostrils with it, so that the patient should not smell the fumes of the liquor. Another patient was a man who was dying of cancer, and had but a few days at most to live. Yet he persistently refused the little wine which his doctor wished to give him. I have had publicans for patients who had to serve their customers daily after their

return home, yet they refused to touch alcohol themselves. They all agreed in saying that it was difficult for them to handle the stuff owing to the effects the fumes had upon them, giving them an unpleasant sensation which I have before referred to. I could quote hundreds of such results, but the above will illustrate what takes place.

Let me summarise the main advantages of the treatment. It usually only takes six weeks. The patient is not deprived of his liberty for more than two or three days at the most, and in many cases not at all. The craving for alcohol is absolutely destroyed. The craving never returns of its own accord. The treatment is useless in all pure cases of class 4. It will cure all cases of class 1 and 2, and without it cases of class 3 cannot be cured. The time saved in treatment must be a great consideration to most patients. There is nothing unpleasant to the patient in the treatment; many of my patients have said that their stay at the sanatorium was one of the most pleasant experiences of their lives.

Case I.—E. M., aged 45, entered for treatment August 1895; of cadaverous appearance, slight physique, markedly nervous, general health bad,

suffering greatly from insomnia. He was a heavy smoker. The attacks of alcoholism were periodical, and lasted about a fortnight. During the two or three months' intervals he had no desire for stimulants. While transacting his ordinary business he would suddenly be seized with an uncontrollable desire for them, and rushing from the room would disappear for a time ; he would be found later in the back room of some low inn, where he had been drinking large quantities of whisky. During the debauches he would talk quite rationally, but afterwards could remember nothing of what had occurred. Prior to the beginning of treatment the patient was found by his friends, after having been in hiding for three days, commencing a fresh debauch.

Finding the patient hypersensitive to the effect of strychnine, I did not push this drug beyond $\frac{1}{30}$th gr. three times daily. In combination with this I gave atropine sulphate, commencing with $\frac{1}{200}$th gr., and gradually increasing the doses until the eyes and mouth were affected ; this strength was maintained for a fortnight, and the drug withdrawn two days later. The patient was also given every three hours a mixture of red cinchona bark, gentian, and capsicum. The above strength of strychnine was maintained until the twenty-eighth day, when it was gradually reduced to *nil* at the end of the fifth week. The capsicum in the mixture was only administered

during the first fortnight, and the simpler mixture continued during the remainder of the course. The patient lost the craving for stimulants on the third day; on the next day the insomnia disappeared, his general health improved with marked rapidity, and he left the sanatorium at the end of six weeks enjoying excellent health.

In 1901, when I last heard of this man, he was still perfectly well, and there had been no return of his troubles.

Case II.—W. B., aged 45, entered November 1896; married. At the time of commencing treatment he had been drinking to excess for five years. His nervous system was completely shattered, and the heart's action weakened; he was very emaciated and anæmic.

Treatment was as follows: Strychnine injections were administered four times a day, commencing with $\frac{1}{60}$th gr., and sulphate of atropine, commencing with $\frac{1}{200}$th gr. At the end of the second day the desire for alcohol had completely disappeared. On the morning of the third day, I was, however, compelled temporarily to withdraw the atropine, as the man began to develop symptoms of delirium tremens; these I met with a hypodermic injection of $\frac{1}{2}$ gr. of morphine, which sent the patient into a sound sleep, lasting ten hours. After regaining consciousness the delirium had quite disappeared. The atropine injections were resumed upon the following day,

and continued as in Case I.; the strychnine was rapidly increased, so that by the fourth day he was receiving $\frac{1}{20}$th gr. each injection; and this strength was continued for twenty days, when it was gradually reduced to nothing at the end of the fourth week. The rest of the treatment varied but little from that in Case I.

The patient was so satisfied with the results, that during the two years following his admission he was the means of inducing a number of men from his native town to undergo treatment. I may state that most satisfactory reports regarding this patient have recently come to hand—that is, September 1903.

Case III.—A. B., aged 32, married, one child, entered for treatment May 1891. He was anæmic, of slight build, highly nervous, but there were no signs of visceral disease. He had been drinking to excess for about three years.

Entering under compulsion, and consequently refusing treatment, it was with difficulty that I succeeded in inducing him to submit to treatment by allowing whisky at frequent intervals. He was able to take this stimulant for two days, but on the morning of the third he could not bear its odour, and although he made persistent efforts to drink a glass of whisky-and-soda, was quite unable to do so. Being an intelligent man, he recognised that some change had taken place, and decided to go through with the treatment.

From that time on to the completion of the course he gave me no trouble, but, on the contrary, became intensely interested in his progress towards recovery. The hypodermic treatment consisted of four injections daily of strychnine nitrate, and atropine sulphate, commencing with $\frac{1}{40}$ gr. and $\frac{1}{200}$ gr. respectively. In conjunction with this he received every three hours a mixture of red cinchona bark, coca,[1] gentian, and capsicum. The strychnine was rapidly increased, so that by the third day he was receiving $\frac{1}{20}$ gr. each injection, this strength being maintained for twenty-one days, when it was gradually reduced to *nil* at the end of the fourth week. The atropine was slowly increased until the usual physiological symptoms appeared on the fifth day, and this strength was maintained until the thirteenth day, when it was gradually reduced, and finally discontinued on the sixteenth day. The coca and capsicum in the mixture were only administered during the first fortnight, and the simpler mixture continued during the remainder of the course, which lasted altogether five weeks. During the whole course of treatment he resided with his wife at a neighbouring inn. Here he had every facility for indulgence in his former habits, and enjoyed entire liberty after the fourth day. He rapidly gained in strength and flesh,

[1] For some years now I have entirely omitted the use of coca, and believe that it played no useful part in the treatment of these earlier cases.

his apppetite for food returned during the first week and remained excellent throughout; he slept well, thoroughly enjoyed the daily exercise prescribed, and left for home in good health.

I met with this gentleman about three months ago, and ascertained that ever since the treatment, thirteen years ago, he had retained a strong aversion to all alcoholic stimulants. I may add that about seven years ago he passed through a severe financial crisis, owing to the worries of which he became very depressed. At this time he was in a strange country—separated from all his friends, and in the heart of a heavy drinking community. I naturally asked him whether, under this great trial, he felt any inclination to resort to stimulants; his reply was that he never once thought of them. Prior to his treatment his family physician had informed me that he would not live two months longer unless something was done to check his heavy excesses.

Case IV.—C. H., aged 50, married, a commercial traveller, was treated May 1891. He began drinking at the age of twenty, but did not drink to excess till he was thirty-five. Though a man of exceptional ability, his drinking habits had brought him so low as to cause him to sell his furniture to obtain money for drink. He had been unusually fleshy, but at this time the flesh hung upon him loosely, and there was considerable

enlargement and tenderness in the hepatic region. The heart's action was weak, but there were no lesions ; the mental faculties, even during sober periods, were enfeebled. The man was a nervous wreck, the slightest thing throwing him into either tears or excessive laughter.

Treatment was as follows : Three strychnine injections were administered precisely as in Case III. The atropine was commenced in the same way, but was temporarily withdrawn after two days' administration, as symptoms of delirium tremens appeared. Doses of whisky had been allowed periodically up to this time, and to obtain sleep 30 grs. of potassium bromide had been added to the final drink of the day. Although he slept off and on during the second night, the delirious symptoms remained. On the morning of the third day he was given $\frac{1}{2}$ gr. of morphine hypodermically ; at the end of two hours the excitement had increased to such an extent that he was rapidly exhausting his remaining strength. Another $\frac{1}{2}$ gr. was injected, and after an hour and a half had passed without the desired result another $\frac{1}{4}$ gr. was administered. This caused the excitement to subside in about ten minutes, so that he dropped into a deep sleep which lasted for about seven hours. Upon waking for a few minutes he took some bovril, and I gave an injection of strychnine. Another quiet sleep ensued for about the same period as the first. During the few minutes he was next

awake he was fed and treated as before; altogether he slept for twenty-four hours, at the end of which time the atropine injections were resumed and continued as in Case III. He found on regaining consciousness that the craving for stimulants was greatly lessened, and during the course of the next two days it not only disappeared, but was replaced by absolute aversion to alcohol. With the exception of some slight modifications incidental to the condition of the patient's system, the treatment varied but little from that in Case III. during the remainder of the course. He returned home in what he was pleased to term "the pink of condition," his treatment having lasted five weeks.

During the second week he informed me that he had apparently been "living in a cloud," but he now felt as though "scales had fallen" from his eyes, and that he could not only think and see clearly, but that also his views on the use of intoxicants had been entirely reversed. His subsequent career proved that his recovery was complete. It may be added that three years after treatment he unintentionally took some brandy sauce when away from home; the effect was remarkable, in that he had hardly time to leave the dining-room before vomiting. He remained well in January 1904.

The four cases cited are typical of the majority, but I may refer to one extreme case that passed through my hands in October 1895. It was a

case of acute alcoholic poisoning in a man thirty years of age. He was a confirmed inebriate, and not expected to rally from the unconscious condition in which I found him. I agreed to treat him in consultation with his medical adviser, provided consciousness was regained. The treatment was administered at his own home; and as the man had no idea that he was being treated for alcoholism, I purposely left the decanter and siphon within his reach. On the fifth day he ordered them out of his sight, remarking that their presence nauseated him. This may be scarcely credible, but I can vouch for the accuracy of the statement. It was not until his recovery was completed that he was informed of the reason of his treatment. When I last heard of the patient three years ago, there had been no relapse to his former habits.

I think that the foregoing cases will fully illustrate the method of application.

We now have to consider the treatment of the *Morphine habit*. There are three distinct classes of treatment, namely, that which favours immediate withdrawal of the drug, that which favours a very gradual reduction, and that which favours the middle course, *i.e.* semi-rapid withdrawal. Personally, I do not think that an exclusive resort to any one of these methods is justified,

for it is purely a question of the nature of the case itself. Different patients require different treatment; no single method is suitable to every case. Each method has its particular field of usefulness. If the habit is of recent acquisition and the quantity of the drug taken is small and the constitution strong, an abrupt withdrawal of the drug is the best and quickest method. On the other hand, there are cases where the amount of the drug taken is very large, the habit of long duration, and the general health broken; here it would be very unwise to withdraw the drug abruptly. Between these two classes of patients there are a large number of patients who are neither so broken in health nor such heavy users of the drug, and these form a very suitable class for semi-rapid withdrawal. We ought therefore to consider the nature of the case before deciding upon the form of treatment. If we are wise, we will also remember the peculiar action of the drug, in even minute doses, upon habitual users during withdrawal, namely, the shock which will be experienced by the patient at the end, no matter how small the dose suddenly withdrawn. In this fact lies the strongest argument against the prolonged withdrawal in all save the very feeble. The most generally adopted plan is the semi-rapid

withdrawal; I will therefore describe this first.

Having decided that the patient is one suitable for this method of treatment, we proceed to dispossess him of all supplies of the drug, syringes, etc. Having made the usual routine examination with regard to his health, we proceed to treat him. He will always tell you the amount he requires daily, and I invariably begin treatment by administering half this quantity. I do not ever remember a case in which this amount did not satisfy the patient, provided he understood that he was getting what he had asked for. The particular method of reduction is immaterial, provided it is regular and steadily adhered to when once begun. Some place a certain amount of the drug in solution in a bottle, and as the injection is withdrawn the bottle, is filled up with distilled water, so that each succeeding injection is weaker than the preceding one. The objection to this treatment is the amount of calculation required to adapt the size of the bottle, daily dose, etc., the lack of elasticity to meet unforeseen complications, and the difficulty of keeping the solution sterile over the length of time without disturbing the accuracy of the dosage. A better plan to my mind is to have the solution made up for a few days of the required strength,

and record actual dose administered daily. By giving the injections at regular hours one has only to arrange the sheet so that these hours will appear opposite each day of the treatment. The advantages of this method are accurate dosage, absolute sterility of solution, elasticity, and a complete record of the case. If a space is left for remarks, the cause for each variation of dosage is apparent at a glance. Injections of strychnine nitrate and atropine sulphate are administered throughout the time the patient is taking the drug. Then the atropine is withdrawn. The same mixture as used in the treatment of alcoholism is administered daily during the course. To relieve the pain and discomfort, nothing answers so well as dry heat combined with phenacetin and caffeine. Warm baths are useful, but must be used with caution ; a patient should never be allowed to take one without an attendant being present throughout the whole time of the bath. If the insomnia is marked, veronal sodium is probably the best drug to use ; but it must always be remembered that it is only a substitute for the morphine, and should only be used in extreme conditions of insomnia. Proper diet is also important, every effort being made to nourish the patient rapidly. It will be found that the drug may be cut down to 2 grs. per day

rapidly without much discomfort, and it is after this that the real fight begins. Many patients will tell you that they have succeeded in cutting the amount down to this extent themselves by an exercise of the will-power, but few ever get below this amount without help. If we continue halving the dose daily, or every second day, we will soon reach a point where the amount is ridiculously small in comparison to that used with non-habit patients; yet the victim will look for that dose as eagerly as he formerly did for the 30 or 40 grs. he was accustomed to take daily. I have seen a patient miss such a small dose as $\frac{1}{60}$th grain in the twenty-four hours, when at one time he was used to the heavier doses mentioned above. The usual test satisfied me that this was not mere fancy on his part.

The method of slow withdrawal is not important in itself, and should never be used except in the very few cases where the health of the patient is so bad that no other method can be used. The principle of the treatment is to keep the growth of the habit in check until the patient's general health has improved sufficiently to allow of reduction, which is then carried out in a very gradual manner.

The abrupt withdrawal of the drug. Where this method can be safely used it is the most satisfactory of all. It is short, sharp, and

decisive. Six weeks is ample in which to cure most patients. I have cured a patient taking 70 grs. a day in four weeks, and that without pain or discomfort or any restriction of his liberty. I would not administer the treatment to one who was not in a fair condition physically, but, given this condition, I believe this method to be as safe as any other ; certainly to be preferred in every other respect. The patient is first prepared with the usual purgative dose ; then the strychnine, nitrate, and atropine sulphate treatment is pushed rapidly, so that the strychnine nitrate is given in $\frac{1}{10}$th grain doses three times a day at the end of the third day, while the atropine sulphate is increased until marked delirium is obtained. It will now be found that the patient will not ask for or apparently expect any morphia. The dose of the atropine sulphate must then be reduced till only enough is given to maintain a mild condition of delirium, and the usual tonic mixture mentioned before is administered throughout the treatment. During the delirium, which is allowed to continue for four or five days, the patient is generally free from excitement, being content to sit still most of the time. His delusions are of a harmless character. No morphia is given, the patient being as indifferent to it as one who had never used it. He eats and sleeps normally

during this period, and when not mentioning his delusions he talks quite rationally, but never refers to the question of morphine. At the end of the first week all excess of sulphate of atropine is withdrawn, and when he has become quite normal mentally it will be found that he has no desire for the drug. The strychnine nitrate injections are given throughout the entire course, but the atropine sulphate is given in ordinary doses for only two weeks longer, when it is withdrawn entirely.

Complications must be met, as in all other cases, with the proper treatment.

The treatment of such drug habits as the Cocaine habit, Paraldehyde, Chloral, Sulphonal, Trional, and Veronal habits, is similar to that for morphine. Of these the Cocaine and Chloral habits are well-known, but cases of the others are much rarer. I have treated patients of each kind. The symptoms vary with the particular drug used, but there is a great similarity in the main. There is intense craving for the particular drug used when the patient cannot obtain it. If they have to wait too long for it they are likely to become delirious ; when this stage is reached, there is nothing to indicate the particular drug used. In each case treated by myself, the patient was either a doctor or a chemist, chiefly the latter.

The reduction of the drug in these cases is much less difficult than in a morphia patient, and the suffering decidedly less marked.

Alcoholic Trance

I have already given my own experiences of this peculiar phase of alcoholism, but the following from the *Journal* of the American Association of Inebriety is interesting:—

Some Forms of Irresponsibility—Alcoholic Trance

The frequent statement of prisoners in court, that they did not remember anything about the crime they are accused of, appears from scientific study to be a psychological fact. How far this is true in all cases has not been determined, but there can be no question that crime is often committed without a conscious knowledge or memory of the act at the time.

It is well known to students of mental science, that in certain unknown brain states memory is palsied, and fails to note the events of life and surroundings. Like the somnambulist, the person may seem to realise his surroundings and be conscious of his acts, and later be unable to recall anything which has happened. These blanks of memory occur in many disordered

states of the brain and body, but are usually of such short duration as not to attract attention. Sometimes events that occur in this state may be recalled afterwards, but usually they are total blanks. The most marked blanks of memory have been noted in cases of epilepsy and inebriety. When they occur in the latter they are called *Alcoholic Trances*, and are always associated with excessive use of spirits.

Such cases are noted in persons who use spirits continuously, and who go about acting and talking sanely although giving some evidence of brain failure, yet seem to realise their condition and surroundings. Some time after, they wake up and deny all recollection of acts or events for a certain period in the past. This period to them begins at a certain point and ends hours or days after, the interval of which is a total blank, like that of unconscious sleep. Memory and certain brain functions are suspended at this time, while the other brain activities go on as usual.

In all probability the continued paralysis from alcohol not only lowers the nutrition and functional activities of the brain, but produces a local palsy, followed by a temporary failure of consciousness and memory, which after a time passes away.

When a criminal claims to have had no memory or recollection of the crime for which he is accused, if his statement is true, one or two conditions is probably present, either epilepsy or alcoholism.

Such a trance state might exist and the person be free from epilepsy and alcoholism, but from our present knowledge of this condition it would be difficult to determine this fact. If epilepsy can be traced in the history of the case, the trance state has a pathological basis for its presence. If the prisoner is an inebriate, the same favouring conditions are present. If the prisoner has been insane, and suffered from sun or heat stroke, and the use of spirits are the symptoms of brain degeneration, the trance state may occur any time.

The fact of the actual existence of the trance state is a matter for study, to be determined from a history of the person and his conduct; a grouping of evidence that the person cannot simulate or falsify; evidence that turns not on any one fact, but on an assemblage of facts that point to the same conclusion.

The following cases are given to illustrate some of these facts, which support the assertion of no memory of the act by the prisoner in court:

The first case is that of A., who was repeatedly arrested for horse stealing, and always claimed to be unconscious of the act. This defence was regarded with ridicule by the court and jury, and more severe sentences were imposed, until, finally, he died in prison. The evidence offered in different trials in defence was, that his father was weak-minded and died of consumption, and his mother was insane for many years, and

died in an asylum. His early life was one of hardship, irregular living, and no training. At sixteen he entered the army, and suffered from exposure, disease, and sunstroke, and began to drink spirits to excess at this time. At twenty he was employed as a hack-driver, and ten years later became owner of a livery stable. He drank to excess at intervals, yet during this time attended to business, acting sanely and apparently conscious of all his acts, but often complained he could not recollect what he had done while drinking. When about thirty-four years of age, he would, while drinking, drive strange horses to his stable, and claim that he had bought them. The next day he had no recollection of these events, and made efforts to find the owners of these horses and return them. It appeared that while under the influence of spirits the sight of a good horse hitched up by the roadside alone, created an intense desire to possess and drive it. If driving his own horse, he would stop and place it in a stable, then go and take the new horse, and after a short drive put it up in his own stable, then go and get his own horse.

The next day all this would be a blank, which he could never recall. On several occasions he displayed reasoning cunning, in not taking a horse when the owners or drivers were in sight. This desire to possess the horse seemed under control, but when no one was in sight all caution left him, and he displayed great boldness in

driving about in the most public way. If the owner should appear and demand his property, he would give it up in a confused, abstract way. No scolding or severe language made any impression on him. Often, if the horse seemed weary, he would place it in the nearest stable, with strict orders to give it special care. On one occasion he joined in a search of a stolen horse, and found it in a stable where he had placed it many days before. Of this he had no recollection. In another instance he sold a horse which he had taken, but did not take any money, making a condition that the buyer should return the horse if he did not like it. His horse stealing was all of this general character. No motive was apparent, or effort at concealment, and on recovering from his alcoholic excess he made every effort to restore the property, expressing great regrets and paying freely for all losses. The facts of these events fully sustained his assertion of unconsciousness, yet his apparent sanity was made the standard of his mental condition. The facts of his heredity, drinking, crime, and conduct all sustained his assertion of unconsciousness of these events. This was an alcoholic trance state, with kleptomaniac impulses.

The next case, that of B., was executed for the murder of his wife. He asserted positively that he had no memory or consciousness of the act, or any event before or after. The evidence indicated that he was an inebriate of ten years'

duration, dating from a sunstroke. He drank periodically, for a week or ten days at a time, and during this period was intensely excitable and active. He seemed always sane and conscious of his acts and surroundings, although intensely suspicious, exacting, and very irritable to all his associates. When sober he was kind, generous, and confiding, and never angry or irritable. He denied all memory of his acts during this period. While his temper, emotions, and conduct were greatly changed during this time, his intellect seemed more acute and sensitive to all his acts and surroundings. His business was conducted with usual skill, but he seemed unable to carry out any oral promises, claiming he could not recollect them. His business associates always put all bargains and agreements in writing when he was drinking, for the reason he denied them when sober. But when not drinking his word and promise was always literally carried out. He broke up the furniture of his parlour when in this state, and injured a trusted friend, and in many ways showed violence from no cause or reason, and afterwards claimed no memory of it.

After these attacks were over, he expressed great alarm, and sought in every way to repair the injury. Finally, he struck his wife with a chair and killed her, and awoke the next day in jail, and manifested the most profound sorrow. While he disclaimed all knowledge of the crime, he was anxious to die and welcomed his execution.

This case was a periodical inebriate with maniacal and homicidal tendencies. His changed conduct and unreasoning, motiveless acts pointed to a condition of trance. His assertion of no memory was sustained by his conduct after, and efforts to find out what he had done and repair the injury.

The third case, that of C., was a man of wealth and character, who forged a large note, drew the money, and went to a distant city on a visit. He was tried and sentenced to State prison. The defence was no memory or consciousness of the act, by reason of excessive use of alcohol. This was treated with ridicule. Although he had drunk to excess at the time and before the crime, he seemed rational, and acted in no way as if he did not understand what he was doing. Both his parents were neurotics, and he began to drink in early life, and for years was a moderate drinker. He was a successful manufacturer, and only drunk to excess at times for the past five years. He complained of no memory during these drink paroxysms, and questioned business transactions and bargains he made at this time. On one occasion he went to New York and made foolish purchases which he could not recall. On several occasions he discharged valuable workmen, and when he became sober took them back, unable to account for such acts.

These and other very strange acts continued to increase with every drink excess. At such times

he was reticent, and seemed to be sensible and conscious, and did these strange acts in a sudden, impulsive way. The forged note was offered boldly, and no effort was made to conceal his presence or destination. When arrested he was alarmed, and could not believe that he had done so foolish an act. This was a clear case of alcoholic trance, in which all the facts sustained his assertion of no conscious memory of the crime. In these three cases the correctness of the prisoner's assertions of no memory was verified by all the facts and circumstances of the crime. The mere statement of a person accused of crime, that he had no memory of the act, should lead to a careful examination, and be only accepted as a fact when it is supported by other evidence.

The following case illustrates the difficulty of supporting a prisoner's statement of no memory when it is used for purposes of deception :

Case E. An inebriate killed a man in a fight, and was sentenced to prison for life. He claimed no memory or recollection of the act. I found that when drinking he seemed conscious of all his surroundings, and was always anxious to conceal his real condition; and if anything had happened while in this state, he was very active to repair and hush it up. He was at times quite delirious when under the influence of spirits, but would stop at once if any one came along that he respected. He would, after acting wildly, seem to grow sober at once, and do everything

to restore the disorder he had created. The crime was an accident, and at once he attempted concealment, ran away, changed his clothing, and tried to disguise his identity; when arrested, claimed no memory or consciousness of the act. This claim was clearly not true, and contradicted by the facts.

In a recent case, F. shot his partner in business while both were intoxicated, and displayed great cunning to conceal the crime and person; then, after elaborate preparations, went away. He made the same claim of defence, which was unsupported by any other evidence or facts in his previous life. He was executed. Of course it is possible for the trance state to come on suddenly and crime be committed at this time; still, so far all the cases studied show that this condition existed before, and was the product of a growth beginning in brief blanks of a few moments and extending to hours' and days' duration. Unless the facts indicated the trance state before the crime was committed, it would be difficult to establish this condition for the first time, followed and associated with the crime.

I think in most of these cases, where this defence is set up, there will be found certain groups of cases that have common physical conditions of degeneration. These groups of cases I have divided from a clinical standpoint, the value of which will be more as an outline for future studies.

Probably the largest number of criminal in-

ebriates who claim loss of memory as a defence for their acts, are the alcoholic dements. This class are the chronic inebriates of long duration; persons who have naturally physical and mental defects, and who have used spirits to excess for years. This, with bad training in early life, bad surroundings, and bad nutrition, have made them of necessity unsound, and liable to have many and complex brain defects. Such persons are always more or less without consciousness or realisation of their acts. They act automatically only, governed by the lowest and most transient impulses. Crimes of all kinds are generally accidents growing out of the surroundings, without premeditation or plan. They are incapable of sane reasoning or appreciation of the results of their conduct. The crime is unreasoning, and general indifference marks all their acts afterwards. The crime is always along lines of previous conduct, and never strange or unusual. The claim of no memory in such cases has always a reasonable basis of truth in the physical conditions of the person. Mania is very rarely present, but delusions and morbid impulses of a melancholic type always exist. The mind, like the body, is exhausted, depressed, and acts along lines of least resistance.

The second group of criminals who claim no memory are those where the crime is unusual, extraordinary, and unforeseen. Persons who are inebriates suddenly commit murder, steal,

or do some criminal act that is foreign to all previous conduct. In such cases the trance condition may have been present for some time before and escaped any special notice, except the mere statement of the person that he could not recollect his acts. The unusual nature of the crime, committed by persons who never before by act or thought gave any indication of it, is always a factor sustaining the claim of no memory. The explosive, unreasoning character of crime always points to mental unsoundness and incapacity of control.

A third group of criminals urge this statement of no memory, who, unlike the first group, are not imbeciles, generally. They are positive inebriates, drinking to excess, but not to stupor, who suddenly commit crime with the most idiotic coolness and indifference, never manifesting the slightest appreciation of the act as wrong, or likely to be followed by punishment. Crime committed by this class is never concealed, and the criminal's after conduct and appearance gives no intimation that he is aware of what he has done. These cases have been termed moral paralytics, and the claim of the trance state may be very likely true.

A fourth group of cases, where memory is claimed to be absent, occurs in dipsomaniacs and periodical inebriates, who have distinct free intervals of sobriety. This class begin to drink to great excess at once, then drink less for a

day or more, and begin as violently as ever again. In this short interval of moderate drinking some crime is committed which they claim not to have any recollection of.

Other cases have been noted where a condition of mental irritation or depression preceded the drink explosion, and the crime was committed during this premonitory period and before they drank to excess. The strong probability of trance at this period is sustained by the epileptic character of such conduct afterwards. The trance may be justly termed a species of *aura*, or brain paralysis, which precedes the explosion.

In some instances, before the drink storm comes on, the person's mind would be filled with the most intense suspicions, fears, delusions, and exhibit a degree of irritation and perturbation unusual and unaccountable. Intense excitement for depression, from no apparent cause, prevails, and during this period some crime may be committed; then comes the drink paroxysm, and later all the past is a blank. Trance is very likely to be present at this time.

In these groups the crime is generally automatic, or committed in a manner different from other similar crimes. Some governing centre has suspended, and all sorts of impulses may merge into acts any moment. The consciousness of acts and their consequences are broken up. The strong probability is that these trance blanks begin in short periods of unconsciousness, which

lengthen with the degeneration and mental feebleness of the person. The obscurity of these conditions, and the incapacity of the victims to realise their import, also the absence of any special study, greatly increases the difficulty. It will be evident from inquiry that trance states among inebriates are common, but seldom attract attention, unless they come into legal notice.

The practical question to be determined in a given case in court is the actual mental condition of the prisoner, who claims to have no recollection of the crime. This is a class of evidence that must be determined by circumstantial and collateral facts, which require scientific expertness to gather and group. The Court can decide from the general facts of the crime and the prisoner whether his claim of no memory may possibly be true, and order an expert examination to ascertain the facts. This should be done in all cases where the prisoner is without means, in the same way that a lunacy commission is appointed to decide upon insanity. The result of this expert study may show a large preponderance of evidence sustaining the claim of no memory, or the opposite. If the former, the measure of the responsibility must be modified, and the degree of punishment changed. While such cases are practically insane at the time, and incapable of realising or controlling their acts, they should be kept under legal and medical surveillance for a lifetime, if necessary. Such

men are dangerous, and should be carefully watched and deprived of their liberty for a length of time, depending on recovery and capacity to act rationally and normally. They are dangerous diseased men, and, like victims of contagious disease, must be housed and treated.

The future of such cases depends on the removal of the causes which made them what they are. The possibility of permanent restoration is very promising in most cases. How far alcoholic trance exists in criminal cases is unknown, but the time has come when such a claim by criminals cannot be ignored, and must be the subject of serious inquiry. Such a claim cannot be treated as a mere subterfuge to avoid punishment, but should receive the same attention that a claim of insanity or self-defence would. This is only an outline view of a very wide and most practical field of medico-legal research, largely unknown, which can be seen in every court-room of the land. These cases appeal to us for help and recognition, and the highest dictates of humanity and justice demand of us an accurate study and comprehension of their nature and character.

The following summary of the leading facts in this trance condition will be a standpoint for other and more minute investigations :

1st. The trance state in inebriety is a distinct brain condition, that exists beyond all question or doubt.

2nd. This brain state is one in which all memory and consciousness of acts or words are suspended, the person going about automatically, giving little or no evidence of his real condition.

3rd. The higher brain centres controlling consciousness are suspended, as in the somnambulistic or hypnotic state. The duration of this state may be from a few moments to several days, and the person at this time may appear conscious and act naturally, and along the line of his ordinary life.

4th. During this trance period, crime against person or property may be committed without any motive or apparent plan, usually unforeseen and unexpected. When accurately studied such a crime will lack in the details and methods of execution, and also show want of consciousness of the nature and results of such acts.

5th. When this condition passes away, the acts and conduct of the person show that he did not remember what he had done before. Hence his denial of all recollection of past events, and his changed manner confirm or deny his statements.

6th. When such cases come under judicial inquiry, the statement of the prisoner requires a scientific study before it can be accepted as a probable fact. It cannot be simulated, but is susceptible of proof beyond the comprehension of the prisoner.

7th. In such a state crime and criminal

impulses are the result of unknown and unforeseen influences, and the person in this condition is dangerous and an irresponsible madman.

8th. This condition should be fully recognised by Court and jury, and the measure of responsibility and punishment suited to each case. They should not be punished as criminals, nor should they be liberated as sane men. They should be housed and confined in hospitals.

CHAPTER VI

ETHER INEBRIETY

PERSONALLY, I have never met with a case of inebriety due to ether drinking, and cannot, therefore, think that the habit has obtained much hold in England, whatever may be the facts regarding Ireland or Scotland; but the following, quoted from the *Journal* of the American Society for the Study and Cure of Inebriety, makes it plain that Ireland at least has suffered severely from this form of inebriety. The writer of the article says:

"Ireland has in the nineteenth century presented to the world two interesting and remarkable series of inebrio-psychological phenomena. In 1838, a simple-minded Roman Catholic priest, Father Mathew, adopted and began to advocate the practice of abstinence from all intoxicating drinks. So amazing was the impression made by him, that, in three years, the roll of the teetotal pledges which he had administered exceeded five millions in Ireland, in addition to large numbers

in England, Scotland, and America. The reality of this epidemic of temperance was attested by the statement of the Chief Secretary in 1840, that 'the duties of the military and police in Ireland are now almost entirely confined to keeping the ground clear for the operation of Father Mathew.'"

Though this great wave of sobriety has gradually receded, till now the extent of drinking in Erin is simply terrible. I am every now and again meeting professionally with sons and daughters of Hibernia who glory in their steadfastness to the pledge which they so long ago took at the hands of the Irish apostle of temperance. An accurate study of this unique crusade would, in psychological results, amply repay the labours of any earnest student of mental science.

Curious to relate, the other series of inebrio-psychological phenomena is an experience in an opposite direction—an experiment, so to speak, not, as in the former case, in temperance, but in intemperance.

The disease of inebriety or narcomania (a mania for intoxication by any kind of narcotic or anæsthetic) may, besides other phases, assume a form correspondent to the particular inebriating substance. It may, therefore, be interesting to glance at the origin and growth of this new mode

of inebriate indulgence, as this is the first opportunity afforded to us of observing the rise and progress of such a process in a community.

The centre from which ether drinking spread was the town of Draperstown (with a population of some three hundred), in the southern part of the county of Londonderry. Before Father Mathew's abstinence propaganda, ether drinking was there unknown. Between 1842 and 1845 a local medical practitioner, in response to a request from a few newly-pledged abstaining converts for something the taking of which would not violate their vow, gave them a drachm of ether in water. So far as I can ascertain this was the *fons et origo mali*. A desire for more frequent doses grew upon the ether drinkers, and the practice spread in and around Draperstown, till there was a shop for the sale of ether in one town to every twenty-three of the population. In the session of 1855–56 an Act was passed by the British Legislature, allowing spirits of wine to be used duty-free in arts and manufactures, provided it was made nasty as a drink (which the Government in their innocence supposed would prevent people from drinking it), by the addition of a minimum of 1–9 of methylated spirit. As ether prepared in this way is much cheaper than ordinary sulphuric ether, this cheap production

of " methylated ether " caused the consumption to increase " by leaps and bounds."

The present ether area was, from its mountainous features, a central locality for the illicit distillation of whisky. Owing to the activity of the police and the making of roads, this illicit traffic was eventually stamped out. The disappointed cheap whisky drinkers found a cheap unintoxicant in ether. Mr. H. N. Draper first called attention to Irish ether drinking in 1877, followed by D. B. W. Richardson about 1879, and by Mr. Ernest Hart in 1890.

Ether drinking was in a year or so gradually introduced from Draperstown into the neighbouring town of Maghera, and soon extended its sway till it occupied an area of somewhere about 295 square miles, with a population of nearly 79,000 souls. This area may, in general terms, be said to comprise the mountainous districts, especially of Derry and Tyrone, and to some extent of Armagh and Antrim. Cases of ether intoxication have occurred in Dublin and other parts of Ireland, in Glasgow (Scotland), in Lincolnshire in England, and I have seen several in London.

All the cases which I have seen in England have been persons of education and refinement, who had first been alcoholic inebriates and

gradually developed into devotees of these twin poisons. Nearly all of these English cases have been females, the only males having been members of the medical profession. In Ireland, women assert the equality of the sexes by taking their fair share of this form of intemperance. Small farmers and agricultural labourers make up the bulk of the Irish ether tipplers. Workmen, too, are well to the front. But the practice is by no means confined to these classes. Members of the learned professions have their representatives. Etherists are to be found at almost all ages from puberty onwards. Sturdy Irish lads and beautiful Irish lasses, brimful of Hibernian wit, as well as "sixty-year olds" of both sexes, are slaves to ether drunkenness. The mother may be seen with her daughters, and maybe a neighbouring Irishwoman or two, at a friendly ether "bee." The habit has become so general, that small shopkeepers treat the children who have been sent to purchase some article with a small dose of ether, and schoolmasters have detected ether on the breaths of children from ten to fourteen (or even younger), on their arrival at school.

Some critics have endeavoured to lay the blame of this new development of inebriety on the Roman Catholic religion. Nothing could be more unwarrantable and unfair. The disease has

spread principally among Roman Catholics simply because this is the creed of the greater part of the population. One Protestant village, Tobermore, is as bad as any other place. All my cases have been Protestants.

The amount swallowed at a draught varies mainly with the stage of education in ether consumption. A novice will find a drachm (a teaspoonful) sufficient. Gradually the wished-for effect demands an increased dose, till $\frac{1}{4}$ of an oz. may in time become the ordinary " peg " of an accomplished drinker, to use the phraseology of Anglo-Indians. These are average quantities of a so-called " moderate " drinker. More " seasoned casks " have a higher capacity, many toping off a half a wineglassful as unconcernedly as an average Englishman would drink a glass of claret, or an average American a glass of champagne.

The amount of ether consumed in a day is often remarkable. A confirmed ether inebriate will take a much larger dose than any I have just enumerated, and repeat the dose three, four, five, or even six times in the twenty-four hours when " on the spree." Indeed, in some cases, half a pint has been the regular daily allowance of constant (or habitual) inebriates. In England I have known an ether inebriate use a pint of

ether by inhalation every day. In Ireland, many persons keep themselves intoxicated pretty well during the day for the sum of sixpence—taking two pennyworth at ten o'clock, one o'clock, and four o'clock. What a paradise for drunkards! Drunk three times a day for thirteen cents!

In England, in my own practice, the majority of ether drinkers have inhaled the poison. In Ireland, the universal method is drinking. By the latter mode the ether is taken "neat." Owing to an idea that ether, like whisky or brandy, should be drunk diluted with water to sheathe the virulence of the poison, the uninitiated and ignorant Englishman, when in Ireland, sometimes mixes his ether "peg" with water, "just to try the stuff, you know." Ludicrous failure awaits him; for, unlike ardent spirits, ether is but sparingly soluble in water. The pungency of ether, except to those who have "finished their education," generally calls for an "overture" to the "act" of ether swallowing. Scene I.—The mouth is washed out with cold water. Scene II. A draught of cold water is drunk. Scene III.—The ether is swallowed "neat." Scene IV.—The performance closes with a second and final drink of cold water.

The preliminary draughts of water are to cool the mouth and throat, and the post-ether draught

is to "keep the ether from rising." The washing of the mouth is soon omitted. By and by the preliminary draught of water follows the same fate, the ether dose and the succeeding draught of water being the commonest method. As his education advances, the etherist dispenses with water altogether. He may for a while, especially when drinking an unusually large dose, hold his nose with one hand, but probably ends by despising all precautionary safeguards, and by simply drinking his mouthful of ether at a gulp.

Ether purus of the British Pharmacopœia was at one time affected by my inebriate patients. This pure ether $(C_2H_5)_2O$, which is free from alcohol and water, has been in my hands the only ether preparation which has proved to be without complicatory drawbacks when used as an anæsthetic (Brit. Pharmacopœia, ·720; U.S. ·725). *Ether* of the B.P. (sulphuric ether) was, however, the article generally used for purposes of intoxication. It contains 8 per cent. of alcohol and water with 92 per cent. of *ether purus*, and is soluble in all proportions with rectified spirit, but in only 1 in 10 with water. The specific gravity should be (B.P.) ·735; (U.S.) ·750. It is a swift, potent, diffusible stimulant, narcotic, anæsthetic, and antispasmodic, of great value in medicine.

It has a strong, penetrating odour, is sweetish, hot, burning and pungent to the palate.

To America the whole world owes a deep debt of gratitude for the introduction of ether as an anæsthetic by Dr. Morton, in Boston, in 1846, and any saddening misuse of this grand mode of alleviating human suffering ought not to lessen our appreciation of this splendid boon to humanity.

By the Act 18 and 19 Vict., the use of spirit of wine, free of duty, was permitted in the arts and manufactures, on the addition of a minimum of 1–9 of wood-naptha (methylic alcohol or spirit from the destructive distillation of wood, after rectification; specific gravity, ·803 B.P.), with a view to prevent this fouled liquid from being drunk as a beverage. Ether prepared from this fouled duty-free spirit is, of course, much cheaper than ether prepared from spirit of wine, on which duty has to be paid. The intention, however, was defeated, inasmuch as in the process of manufacture of ether from the fouled spirit, the fouling ingredients (*i.e.* the methyl products) are destroyed. Thus, contrary to the general belief in what is commonly called "methylated ether" being as nasty as the methylated spirit which is used for lamps and polishing purposes, "methylated ether" is to

the taste hardly discernible from pure sulphuric ether. This so-called "methylated ether" is practically undistinguishable from *ether* (B.P.) at the specific gravity of ·717, *i.e.*, when purified. At any other specific gravity an odour is given off after evaporation. Practically, one cannot discriminate between the ethylic and methylic productions.

Price.—The ether thus prepared from the duty-free spirit (sp. vin. rect. *cum* methylic alcohol) can be produced at as low as one-seventh of the cost of ether prepared from the duty-paid spirit, the latter being bought wholesale at $1.25 per lb., and the former at as low as 16 cents.

Ether is imported mostly from England, partly from Scotland, by larger chemists and druggists in the principal towns of Cookstown, Magherafelt, and Maghera. The large dealers supply small shopkeepers, and also cottagers, who sell in "draughts" (rather less than two teaspoonfuls) for one penny. The small shopkeepers also supply the hawkers (who are very often women), who attend fairs and other festive gatherings to dispense the "draughts" of the liquid poison. These draughts are also to be had from the surgeries of some medical practitioners, and in cottages or ether shebeen, where the cottager keeps a pig or two, and sells ether,

the country people frequently giving potatoes, meal, or other produce in exchange. The hawkers carry about a bottle of ether, and do not scruple at selling to any one, however young, bartering a little for one or two eggs. In this way the children may procure the ether on their way to school.

Intoxication by ether presents one distinguishing feature as compared with alcoholic intoxication. The phenomena are practically alike, but in rapidity of manifestation, alcohol is "nowhere." Indeed, in this respect, ether beats the record. There is the exhilarative stage of morbid exaltation, when the fun and exuberant merriment, the latent and ineradicable impulse of one "spoiling for a fight" of the genuine Irishman stands revealed in the twinkle of the eye and the flourish of the shillelagh. The pleasing but quickly vanishing whirl of enjoyment is followed by an evanescent episode of brain disturbance and mental riot, with muscular disturbance and inco-ordination. To these succeeds the concluding comatose stage, when the patient is said to be "dead drunk." The shortest period in which I have seen this inebriate panorama move on till it swung round to recovered sobriety has, with alcohol, been six hours. With ether, I have witnessed the entire revolution in less than two hours.

In my observation an alcoholic inebriate career, from start to fatal finish, has in America been, on an average, one-third of the duration of a corresponding career in Britain. So, curious to say, has the length of an ether intoxicative paroxysm been one-third the length of an alcoholic intoxicative paroxysm. Thus the etherist can have three thorough "drunks" for one of the alcoholist. Herein, in addition to the greater cheapness, lies the superior claim of ether to the "greedy for intoxication," the true "narcomaniac."

Intoxication by ether may be described as "hysterical," and intoxication by ether *cum* alcohol as "maniacal." A man arrested while drunk on ether alone would probably be quite sober by the time the constable had him at the police station, which might be very awkward for the constable, though the arrest had been made when the man was in a frenzy of boisterous excitement. Several deaths from ether, and ether *cum* alcohol, have occurred.

Little is known of the pathology of ether. The habit has been too young to afford opportunities of much port-mortem examination of ether inebriates. Premature old age, an antedated shrivelling up of the living frame, attests the poisonous influence of the destroying agent. Gastritis (acute and chronic), debility, dyspeptic

distress, epigastric pain, pallors, tremors, timidity, moroseness, suspicion, nervous prostration, chilliness, a cyanosed or lemon skin, and an intermittent heart-beat, with exaggerated reflexes, are prominent symptoms. I have one such victim in my mind's eye now. Fawning, cunning, terror-stricken, this wretched medical colleague is the incarnation of utter misery. Not yet forty years of age, he shuffles about like a worn-out old man of ninety, after a wasted and misspent life. It has been urged by some medical authorities that ether is guiltless of producing any pathologial lesion, from the almost lightning rapidity with which its inebriating manifestations appear and fade away, and from no serious, morbid after-death appearances having been observed.

This conclusion is, in my judgment, premature. Judging from the symptoms from which I have seen ether inebriates suffer, I have not the slightest doubt that ether has a pathological influence on various organs and tissues, and that, if ether drinking could boast of as venerable an antiquity as alcohol drinking, unmistakable lesions would have been but too manifest. What are the forty years of ether consumption by a hundred thousand persons, to the thousands of years of alcohol by at least as many millions of human beings ?

Happily, this new form of inebriation is but in

its infancy, so there is some hope that its growth may be "nipped in the bud." As, in the conversion of methylated spirit into ether, the nauseous methyl products are destroyed, something might be done towards making the liquor loathsome to the palate by the compulsory addition of the wood spirit *after* the completion of the etherification, before the sale of the liquid. This, however, would be but a palliative, for I have had patients under my care who drank methylated spirit (some even from jars with anatomical preparations); and in Edinburgh and Glasgow, Sunday drinking of this nasty beverage recently flourished apace. In a certain locality in the North of Ireland, the drinking of methylated spirit was introduced seven or eight years ago. At first confined to the very poor in a hilly district, it has spread rapidly, till now farm labourers and farmers are daily indulging in it.

There are many inebriates who hate and abhor the taste of the intoxicant which, in their narcomaniac madness, they would barter their salvation to procure.

Another remedy would be the abolition of the retail sale. This would help by putting difficulties in the way of the drinker, but would only mitigate the mischief. Still more effectual would be the scheduling of ether as poison, the sale of

which is restricted to druggists under certain safeguards. This course was so readily adopted for Ireland by the British Government in January last, that I have yet hope the day will come when the more deadly allied poison—alcohol—will be placed in the same category, and so dangerous a drug will be relegated to the shelf of the apothecary, its sale hedged in with as stringent precautions as is now the sale of arsenic or prussic acid. But this halcyon era of prohibition will only be attained after a prolonged struggle, amid the howls and groans of an enraged liquordom, whose indignation is concentrated on all who attempt " to rob the poor man of his beer."

It is too soon yet to foretell the ultimate result of the bold step taken by our Government in scheduling ether as a poison, but it has made the procuring of ether for drinking purposes so difficult that at present the sale has diminished by at least 75 per cent. I fear, however, that the cupidity of some wholesale dealers will incite them to risk the penalties of the law by surreptitious sales, which will speedily be ferreted out by the marvellous cunning of the diseased and demoralised inebriate.

The lines of sound treatment of ether inebriety, and of its prevention by law, must alike be based on an intelligent appreciation of the true char-

acter and etiology of ether drunkenness. This is, in reality, but a new manifestation of an underlying morbid condition which renders certain of the sons and daughters of men peculiarly liable to plunge into intoxication. We can never hope to succeed in the cure and prevention of any disease until we first recognise the presence of the disease itself. The malady of narcomania, as subtle as it is far-reaching in its influence on body, brain and mind, and morals, is a legitimate outcome of natural law, and we will not be adequately equipped for the fight till we are thoroughly conversant with the laws under which every form of the disease of inebriety is developed and propagated.

The late Norman Kerr refers to the subject of ether drinking as follows :—

" In a locality in the North of Ireland, ether drinking has prevailed for nearly half a century. The evils which have arisen there from this species of inebriety are so serious that the attention of the Presbytery of Armagh was recently called to the practice. The good and single-hearted Theobald Mathew administered the teetotal pledge to nearly six million Irishmen; but as the influence of his wondrous and saintly labours began to fade, a drink was introduced into the locality in question, for which powers of exhilaration and stimulation were claimed, and

of which it was asserted that it was not whisky, could not intoxicate, and was harmless. Ether inebriates are to be seen to-day in this community of ether drinkers. There are individuals who partake of this anæsthetic in limited quantity, as there are multitudes in the rest of the United Kingdom who are 'moderate' drinkers of alcohol. A glass of sulphuric ether is drunk as unconcernedly as a glass of Irish whisky in other parts of Ireland, especially if the mouth be rinsed out with cold water first. There are many ether inebriates who drink large amounts of this rapid and volatile inebriant. A few fatal cases have occurred.

"The intoxication of ether is more rapid than that of alcohol, and even more lively. It is more effervescent and sparkling, and, though unconsciousness may have been reached, it is much more evanescent in its effects. The whole drama of ether exhilaration, drunkenness, and dead drunkenness, with a return to sobriety, is often performed in little more than half the time occupied by a similar alcoholic performance. Etherism is the antipodes of opiumism. The intoxicated by ether are merry, frisky, and mercurial. The intoxicated by opium are serene, sedate, and lethargic. But, like opium, ether does not appear to set up a permanent pathological change of organic or connective tissue. In this respect both these substances differ from alcohol.

"I may refer to two cases in England, one a medical man, the other a lady. The former is forty-six years of age, of a nervous temperament. No known inebriate heredity. At first he took chloral and opium, then he devoted himself to ether, and has been an etherist for some four years. At first irregularly periodical, he has now become a constant inebriate, will lie, cheat, or steal to procure a fresh supply.

"The other is an elderly lady, who was addicted to chloral for some eight or nine years. She then became alarmed on account of the extreme feeling of cardiac weakness which she experienced, and she resorted to ether. Her approach is heralded by the characteristic odour long before she is seen, and she returns to her intoxicant as soon as the effects of the previous dose have passed away."

Chloroform Inebriety

Whether this fascinating habit has obtained any hold in this country or not, it is difficult to say, for the practice is a very secret one, and it is only in the last stages of the disease that the patients seek medical advice; and as they do not present themselves at the usual Inebriate Homes, it is to be presumed that they are attended privately by the family physician. That the habit could be easily acquired is well known to all

physicians who administer the drug during labour, as the patients frequently beg for some more of that delightful stuff which gave them such beautiful dreams. I have already related my personal experience of the fascination of the drug, but the following vivid picture of chloroform inebriety is so instructive that I have quoted it in full from the *Journal* of the American Association for the Study and Cure of Inebriety.

"The following history of a case is so graphic and full of suggestions as to give the reader a good idea of such cases:

"He says: 'With me the chloroform infatuation was a case of love at first sight. I had been always temperate, almost a total abstainer from stimulants of all kinds. Once or twice I had smelt chloroform, and thought its odour pleasant. I was a young man just finishing my education, and fond of study. I had had some curiosity to know what it was like to be put to sleep with chloroform, and one night I happened to see a 1-oz. bottle of chloroform which was bought for toothache. I took the bottle home with me, and when I went to bed put a little of the chloroform on a handkerchief, and for the first time felt the delightful sensation of being wafted through an enchanted land into Nirvana. Those who know nothing of intoxication, except in the vulgar form produced by whisky, have yet to

learn what power there can be in a poison to create in a moment an Elysium of delight. It is a heaven of chaste pleasures. What I most remember is the vivid pictures that would seem to pass before my eyes—creations of marvellous beauty—every image distinct in outline, perfect in symmetry, and brilliant in colouring. The enjoyment is purely passive ; you have only to watch vision after vision ; but why each vision seems more wonderful and charming than the last you cannot tell, and you do not stop to question.

" ' I suppose that it was an unfortunate circumstance for me that I had never been drunk before in my life, and I never thought of comparing my blissful condition with that of the wretches I had sometimes seen staggering through the streets. I had made a great discovery. I had found a golden gate into dreamland—dangerous, indeed, to approach, I knew that, but who would heed any danger where the prize to be obtained was so great ? and, guarding jealously my secret, I took care night after night to have by me the key to that golden gate. Probably I inhaled from half a drachm to a drachm or two each time. Generally I did not waken again until morning, and my sleep seemed to be just as refreshing as usual, only now and then I would wake with a trifling headache, and feel disposed to lie a little longer in bed than common. My bodily condition did not seem to suffer in the least, and my

faculties all seemed as keen as ever. I felt no craving for my pet intoxicant during the day—did not give it a thought often until bedtime came, and then it would occur to me for a moment to try and see how it would seem to go to sleep in the ordinary way, the conclusion always being that—to-morrow night I would make the experiment. So, before I knew it, I was a slave. I would say to myself, "It does not hurt me; it seems to have no more effect than the cigar my friend smokes after dinner. Really I believe it is a positive benefit. It seems to keep my bowels regular, and it certainly makes me sleep soundly all night."

"'But after a while I found that I was using a larger quantity of chloroform than at first. I would take a 2-oz. bottle half full of the stuff to bed with me, and, inhaling directly from the bottle, would forget at last to cork it, and in the morning it would be empty. Sometimes I would wake after midnight, or partially wake, to take another dose. I found that there was a bad taste in my mouth all the time, keeping me in mind of chloroform. I was often nauseated in the morning, and sometimes at intervals during the day. I began to feel a longing for chloroform whenever I had a little headache, or was dispirited from any cause; and I sometimes yielded to what I already knew was a morbid craving. I began to be indifferent to the things that personally had interested me, avoided

society, and became depressed in spirits. My complexion became sallow, whites of the eyes yellow, the bowels sometimes windy and unnaturally loose, skin dry and seemingly bloodless, and injuries of the skin did not heal rapidly. In winter there was a tendency to chapping, that had not before been noticed.

"'Meanwhile I had ceased to have visions, or they came rarely. I began to realise that my pet habit was becoming my tyrannical master. I had no special cares to drown, but it became my insane pleasure to draw over my senses the veil of oblivion. I loved the valley of the shadow of death. I knew there was danger that some night I would pass over the line, into a sleep from which there would be no waking; but death had no terrors for me. Nay, to bring all my faculties and powers and ambitions into the sweet oblivion of transient death, was the one pleasure for which I cared to live. I was conscious of a profound moral deterioration; I became materialist; I had no soul; immortality was a dream of the ignorant; I, who had a thousand times annihilated my own soul with my senses, knew that the dream had no corresponding reality.

"'Yet all this time I continued faithful in my daily duties, and resisted successfully the temptation to hurry through my evening, so as to get the sooner to my chloroform. I did not admit to myself that I was a slave to the habit, or even that the habit was an injury to me, as yet;

but I began to be afraid, and the more when I found, when I resolved (as often I did) to omit my nightly indulgence, just for a week, how impotent my will was in the matter.

"'This was my condition at the end of two years. I was still only using a moderate quantity of the chloroform, about three drachms daily, exceeding that quantity only by accident. An opportunity offered for a change of occupation and surroundings, which I eagerly seized, in the hope that it might enable me to break my fetters. For about three months, under the new surroundings, I abstained from chloroform, and found it really not difficult to do so. I began to think that I had greatly overrated the power of the habit. At all events, after the first week I had no craving for the stimulant. But one day I came across a bottle of chloroform. When I saw it I smiled to myself to think that I had imagined myself a slave of any such thing. Night came, and when I was ready for bed the devil of appetite gave me his commands, and I obeyed. Just one smell to see whether I really wanted it; I would not take the bottle to bed with me. So I inhaled, standing, directly from the bottle—a full pound of chloroform—and with the first breath of the vapour came back, with renewed force, all the old appetite, keener than ever from long abstinence. Once more I saw the old-time visions, as beautiful and as vivid as at first. One peculiarity of these visions I may speak of

right here. Objects would appear with wonderful sharpness of outline just as they would be seen with the eyes, only reduced to microscopic size, like objects seen through an inverted telescope.

"'To go on with my story. What happened after I got the bottle in my hands I do not know. The next morning found the bottle corked and in its place, but only half full of chloroform, and I was told that I had been lying in some kind of a fit; some thought I was drunk—as indeed I was. From this time I realised myself a slave, but not now a willing one. I did not again commence at once the use of the chloroform, but at intervals of from three to eight weeks I would indulge in a regular spree, lasting from one to three days, during which I would keep myself as nearly as possible dead drunk, and would consume from four to eight ounces of chloroform. All this time I kept my habit a secret, and continued to do my ordinary work with the usual zest in the intervals between my sprees. At last discovery came. You will remember how I was found apparently lifeless, and how by the active use of restoratives you brought me to myself. How my moral perceptions were quickened the moment I saw myself through the eyes of another!

"'You know that it was not in a week or a year that I was placed morally on a firm foothold again. Indeed, you did not know how often, after I had given you and myself my word and

pledge to abstain wholly from chloroform, I relapsed, taken unawares by the tempter. For more than two years I kept up the conflict, too often thinking the final victory won, only to find there was one imperative command it was useless for me to attempt to disobey, and that command came to me whenever the least whiff of chloroform entered my nostrils. Once or twice I tried the expedient of returning to my first practice of a regular moderate use of the stimulant, but I found that moderation was now almost impossible. If I went to sleep under the influence I would awake again, and find myself then unable to sleep, distressingly wide awake and nervous, until I courted again my "dearest foe." Symptoms like those of delirium tremens several times developed. I saw "things," not now beautiful visions, but shadowy images that filled me with nameless, irrational horror. Appetite was capricious. I was frequently nauseated, but food seemed to relieve this condition; vitality was low, the blood ran sluggishly in my veins, and seemed especially to desert the surface of the body. I suffered particularly in cold weather, and it was during cold weather, in winter especially, that I found it almost impossible to resist my besetting temptation.

"'At last I prevailed by sheer force of will. I had recovered enough faith in the soul to assert my freedom, and I now look back upon those years of conflict with a kind of self-pity, to think

I could have been so weak. But I do not to-day court temptation. I am not conscious of a lurking appetite, but I dare not put my virtue to any severe test. I am sure, however, that the chloroform habit is one that can be broken by steady determination. I have no faith in any process of tapering off. It is just as easy to quit once for all as to prolong the agony, and the suffering is often purely imaginary. It took many months for me to recover. If doctors only knew the fascination of this drug they would seldom or never prescribe it. The danger of the wine-cup is nothing to that of the chloroform bottle.'"

Coffee and Tea Inebriety

As a student at the London Hospital I had my attention directed to this form of inebriety. At that time—1884—the hospital staff treated large numbers of those addicted to the excessive use of tea. Many women sat all day stitching in close hot rooms and drank tea incessantly; after a time they were compelled to seek medical aid. The following description of this form of inebriety is given by the American Association of Inebriety:—

"Most physicians are doubtless able to recall numerous instances in which coffee has induced

more or less serious symptoms. It seems that personal idiosyncrasies often determine the extent of the evil. The evils upon the eyes and ears of people are more frequent from coffee than from tobacco or alcohol. It does not absolutely destroy vision or hearing, but it induces functional troubles very annoying to their possessors. That coffee is the efficient agent, appears from the fact that upon the entire discontinuance of the use of coffee the symptoms complained of disappear.

"Dr. Guelliot has published twenty-three cases of chronic caffeism. Of these cases seventeen were women.

"The following are the principal symptoms:

"Anorexia, disturbance of sleep, trembling of the lips and tongue, attacks of gastralgia, different kinds of neuralgia, dyspepsia, and leucorrhœa, often profuse. In the twenty-three cases, he found in eighteen, anorexia; in sixteen, disturbance of sleep; in sixteen, trembling of the lips and tongue; in twelve, leucorrhœa; in eleven, gastralgia; in ten, dyspepsia; in ten, neuralgia of various forms; in eight, cephalalgia; in four, vertigo and convulsive attacks; in four, obstinate constipation; and in three, constipation and diarrhœa alternating.

"The patients had pinched, pale, wrinkled faces, a weak, rapid pulse, and the sleep was disturbed by anxious dreams. The following is the account of a typical case: A woman in middle life kept

her pocket full of coffee, which she ate constantly. Her skin was of an earthy tint, constipation was obstinate, sleep very irregular, and her mind restless, anxious, and full of forebodings. She was much emaciated, and both the nervous system and digestion suffered severely at times. The lips and tongue were tremulous, dry, red, and cracked. The appetite was very irregular, and vertigo, prolonged headache, and epigastric pain were present most of the time. She was placed under treatment and became delirious. Beef-tea, milk, baths, and a mild galvanic current were used for several weeks, and these were followed by bark tonics. She was discharged restored six months later.

"The evil effects of coffee are especially observable in children. The coffee drunkard is described as having thin, pinched features, pale, wrinkled face and a greyish yellow complexion. The pulse is weak, frequent, and compressible. The sleep is troubled with anxious dreams.

"Although coffee does on the whole far more good than evil, it is important to bear in mind the evils that it is able to produce under favouring circumstances. In a general way it may be said that indoor brain workers do not bear coffee as well as outdoor muscle workers. Persons of nervous temperament bear coffee badly.

"The effects of coffee when pushed to an excess may be to some extent confused by the alcohol and tobacco which often accompany it, but they

can be studied more accurately in women, especially in those who do not drink coffee, but eat it.

"As a rule, both nervous system and digestion suffer in these cases. The appetite fails, there are attacks of sharp epigastric pain, much vertigo, and prolonged headache. There is less insomnia than might be supposed by those who know the weakening power of a single cup, but much dreaming and restlessness of a non-aphrodisiac type. The pulse is weak and quick, there is often an anæmic murmur. The muscles waste quickly. The coffee inebriate is always thin. He may be a mere skeleton; his eyes are bright and quick in movement, their pupils large; and may be mistaken for a tea-drinker. In the insomnia which follows, when the coffee is removed, the only remedy is the old poison.

"As with tea-drinking, coffee addiction is followed by the employment of spirits and other drugs. Many inebriates and opium-takers have a history of excessive use of coffee before the other drugs were taken. The recognition of addiction to coffee is important in many cases of neurotics, especially in children and young persons, and unless promptly checked will be followed by serious results. The excessive use of coffee in all cases is a very significant hint of nerve-exhaustion and disorder of the motor nerves.

"In the late war many cases of delirium from coffee were noted where the food-supply was scant and coffee was abundant. Some of these

cases came under special treatment, and yielded readily to baths, mineral waters, and strong foods. When coffee seems first to have been used for insomnia, the treatment must depend on a careful study of the etiology, and from the removal of the causes the cure may be expected. I have also noted a number of cases in young children of inebriate and neurotic parents who developed a morbid impulse for coffee. Such cases require active treatment, and milk, mineral waters, and baths are prominent remedies. Neurotic disturbances and diseases from coffee are but little known.

"Dr. Mendel, of Berlin, has lately published a clinical study of this neurosis, which is growing rapidly in this country. His observations were confined to the women of the working population in and about Essen. He found large numbers of women consumed over a pound a week, and some men drank considerably more, besides beer and wine. The leading symptoms were profound depression of spirits, and frequent headaches, with insomnia. A strong dose of coffee would relieve this for a time, then it would return. The muscles would become weak and trembling, and the hands would tremble when at rest. An increasing aversion to labour and any steady work was noticeable. The heart's action was rapid, irregular, and palpitations and a heavy feeling in the precordial region were present. Dyspepsia of an extreme nervous type was also present. Acne rosacea was common in these

cases. These symptoms constantly grow worse, and are only relieved by the large quantities of coffee, generally of the infusion. In some cases the tincture was used. The victims suffer so seriously that they dare not abandon it for fear of death.

"Where brandy is taken only temporary relief follows. The face becomes sallow, and the hands and feet cold, and an expression of dread and agony settles over the countenance, only relieved by using strong doses of coffee. In all these cases acute inflammations are likely to appear any time. An injury of any part of the body is the starting-point for inflammations of an erysipelatous character. Melancholy and hysteria are present in all cases. In this country the coffee-drinker after a time turns to alcohol and becomes a constant drinker. In other cases opium is taken as a substitute. Coffee inebriates are more common among the neurasthenics, and are more concealed, because the effects of excessive doses of coffee are obscure and largely unknown. Many opium and alcoholic cases have an early history of excessive use of coffee, and are always more degenerate and difficult to treat. A very wide field for future study opens up in this direction.

"Dr. Slayter describes a case of delirium in a girl who chewed large quantities of tea. It appeared that masses of tea leaves had lodged in the bowels, and the delirium was in some measure dependent on the irritation and reflex action which followed. Trembling, delirium, and delusions of injury

from others, gave it a strong resemblance to delirium tremens. The amount of tea chewed daily was over one pound. The patient recovered by the use of free cathartics and the withdrawal of the tea. In 1881 I saw a boy who had delirium and trembling that had existed at intervals for two months. The fact that his father had died an inebriate seemed to be a sufficient reason for his symptoms in the minds of his friends. It was ascertained that he had for years drunk large quantites of tea. Having been employed in a tea-store, he had chewed it freely. He was literally a tea inebriate. He had inherited an inebriate diathesis, and the early and excessive use of tea was a symptom of it. He had all the symptoms of one who was using alcohol to excess. He recovered, and a year later used coffee to great excess, until he became unfit for work; then was under medical care for a time, recovered, and finally became an opium-taker.

"Another case came under my observation in the person of a little girl, twelve years old, the daughter of a patient under my care for inebriety. She had gradually and steadily become excessively nervous. Could not sleep, had muscular twitchings and delusions of fear; would burst into tears, and complain that she was going to be turned out into the streets. She heard voices at night, and could not keep still. She also imagined that her father was being burned. It was finally found that she was a tea inebriate,

and both drank and chewed it at all times and without any restraint. A physician consulted me about a singular stage of trembling and mild delusions which had appeared in a family of three old maids living alone in the country. It was found to come from excessive use of tea, and to be tea inebriety. When this was stopped they recovered. My observation leads me to think that these cases are not uncommon among the neurotics. They are of such a mild character at first as to escape special observation, and hence are supposed to be due to other causes. Such cases, after beginning on tea, take other drugs, and become alcohol, opium, or chloral takers, or develop some form of neurosis, which covers the real and first causes.

"Theine is the active principle of the leaves of Chinese tea, and is generally reputed to be identical with caffeine, both in chemical composition and in physiological action. My experiments show that it differs very markedly in physiological action from that of caffeine. Caffeine principally affects the motor nerves, while theine chiefly influences the sensory nerves, and clinically proves itself a most valuable analgesic, surpassing morphia in promptness and permanency in relieving pain in some affections, without producing any, or at least very little, disturbance of the general nervous system. It paralyses sensation before motion; it impairs sensibility from the centre to the periphery, and not, like

brucine and cocaine, from the periphery to the centre ; it produces convulsions which are spinal and not cerebral ; it has a more powerful action on the sensory nerves, and less on the motor nerves than caffeine.

" From the results of theine in these cases it will be seen that it is a powerful anodyne without producing any intoxication of the higher nerve centres, which is so common with morphia and all other agents belonging to this class. Its influence is both quick and persistent, and it manifests an almost exclusive affinity for the sensory nerves. It relieves pain by acting from the centre toward the periphery, and showing its effects but very seldom above the seat of injection. In 1–10, 1–5, and even $\frac{1}{3}$ grain doses it is entirely free from dangerous consequences—the only inconvenience which it causes is a slight but transient burning at the point of introduction. I use a one per cent. watery solution of Merck's preparation—ten minims of which equal one-fifth of a grain of theine. Larger doses are required in some individuals in order to bring out its characteristic action.

" Effects of Tea Drinking on the Nutrition of the Eyeballs

" Dr. Wolfe has described the first effect as one of softening of the vitreous humour, which became filled with floating particles of pigment.

It had come under his notice in persons who at first sight seemed to have very little in common. He had found it among—1. The mining population, who pass a deal of time underground. 2. Washerwomen. 3. Middle-aged labourers, masons, and outdoor workers. 4. Shop and factory girls. 5. Not a few belonging to the upper classes. His attention was specially directed to the affection by its frequent occurrence among Australians who came to consult him. He could discover no assignable cause for the disease, either in the tissues themselves or in the history of the patient; and it was only on directing his inquiries to their diet, and finding that they all agreed in consuming large quantities of tea, that he came to suspect its agency. A comparison of the numerous cases of opacity of the vitreous humour occurring among tea-drinking populations, with its less frequency in France, Germany, and America, and its rarity among the Turks, tended to confirm his suspicions. Physiology did not suggest an explanation, but chemistry pointed to theine and tannic acid as most likely to cause disease. Theine might be left out of consideration, being identical with caffeine, which was innocuous; so there only remained tannic acid. This precipitated albuminoids from their solutions; hence it probably acted injuriously by precipitating some of the most important constituents of the food, and also by affecting the mucous membrane of the stomach

and alimentary canal, and thus preventing digestion and assimilation.

"Some observations had been made as to the effects of tea-drinking on the healing of wounds and ulcers, by a Glasgow surgeon, who had noticed that, in persons addicted to this habit, they took on a sort of scorbutic character. Physicians also ascribed numerous cases of rebellious dyspepsia to the use of tea. The disease of the vitreous humour, above alluded to, could hardly be an isolated pathological fact, but must be associated with deleterious changes in other parts of the economy, and probably only made its appearance in organs which had a predisposition to be so affected. Without venturing upon any theory as to the action of tea on the vitreous humour, he would point out that the first expression of acute irritation of the fifth nerve in sympathetic ophthalmia was opacity of the vitreous humour and detachment of pigment from the whole uvular tract. So it was possible that chronic irritation of the same nerve might give rise to such changes in the nutrition of the eyeball as to bring about the condition under consideration. He commended this subject to the notice of general practitioners, who had better opportunities of judging of it than he had."

Treatment of the Opium Habit

The American Association for the Study and Cure of Inebriety gives details of two methods

for the treatment of the Opium habit. One of these is credited to Dr. Jennings of Paris, and is based on the principle of cardiac stimulation, while the other (Dr. Mathison's) is of an entirely opposite nature, being essentially a bromide treatment. They are contained in the following quotation from their well-known publication, *The Disease of Inebriety* :—

"In the special treatment :—1. We have to deal with an individual whose will-power is subverted. To him the enslaving drug has become as much a necessity of existence as his food and drink. Any treatment which depends upon his own volition must fail. For his own must be substituted the control of another sound will. As a rule, removal from home is essential to secure this control. As in insanity and hysteria, strangers have far more control than relatives or friends. It has the further advantage of breaking up the train of associations, which is always a great aid in overcoming a confirmed habit. Special asylums have their advantages (if under proper management) and their disadvantages. I shall not discuss this point.

"The choice of attendant is of great importance, as upon his or her trustworthiness and efficiency the result may often depend. In the case reported, the firmness and tact of the nurse, her readiness with massage, bath, medicine, or nourishment, etc., enabled the reduction to be

made rapidly, and assisted greatly in mitigating the prostration and suffering of the patient. With inflexible will she combined a patience and sympathy which made the patient feel she was a strong friend to help, not a jailer or detective, and was thus a model of what is needed in the attendant.

"2. Control of the patient having been secured, how shall the drug be taken from him? Three methods have their advocates: (*a*) immediate and entire withdrawal; (*b*) gradual reduction; (*c*) rapid reduction.

"Under the first the sufferings are intolerable, the prostration great and dangerous, and it does not offer any great security against relapse.

"In the majority of instances the rapid reduction is the wiser means between the two extremes. The rapidity should vary with the case, and should be such as not to involve extreme suffering or great prostration.

"3. We have to deal in all cases of long standing with an emaciated body and starving nerve centres. At the same time we have complete anorexia and feeble digestion, perhaps nausea and vomiting. The feeding of the patient becomes, therefore, one of the most important, and perhaps most difficult parts of the treatment.

"Often it is well to begin with exclusive milk diet (peptonised, if necessary). Systematic feeding of small quantities at regular intervals is usually best. Confinement to bed during early

part of treatment will promote the nutrition. At the same time it reduces to the minimum the tax upon the shattered nervous system. For the same reason, as well as for the sake of preventing the clandestine supply of the drug, seclusion is best until convalescence is well established.

"The good results of the 'rest treatment,' as advocated by Mitchell, *i.e.*, seclusion, confinement to bed, forced feeding, massage, and electricity, with gradual (usually rapid) reduction of the drug, are permanent.

"4. The use of the various mechanical agencies for the relief of pain, quieting the nervous system, inducing sleep and promoting nutrition—massage electricity (both faradism and galvanism), hot baths, Turkish baths, the cold shower-bath. Dr. Jennings recommends the hammock for the restlessness and desire for constant motion, so often a distressing symptom.

"5. Medicinal agents to meet the various indications of each case."

The observations of Drs. Jennings and Ball, of Paris, upon the sphygmographic tracings of the pulse of habitués, we believe, have laid the physiological basis for a rational system of medication.

These observations, which have been confirmed by others, show "that the pulse of a morphine habitué in a state of privation . . . caused by want of cardiac impulsion, together with a

resistance to the passage of the blood in the vessels. A hypodermic or morphia given at this moment restores the normal state of the circulation. The study of these tracings suggested the use of cardiac tonics and stimulants as substitutes for the morphia during the progressive reduction." The drugs chosen were : " Sparteine, on account of the facilities it offers for hypodermic injection, and producing thus a rapid and evident effect ; and trinitin, because of its congestive effect on the head and its calorific effect upon the body generally."

Dr. Jennings uses these remedies in the gradual suppression of the drug when the reduction has reached such a degree as to bring on the symptoms of deprivation. It is not to be understood that these drugs take the place of morphia, *i.e.* that it can be at once omitted without the usual suffering ; they are but aids in mitigating that suffering by counteracting some of the circulatory disturbances upon which it largely depends.

The evidence of clinical experience is largely in favour of heart tonics and stimulants rather than sedatives. In the case reported, no sedatives were given, yet after the first few nights, sleep was good. The glonoin had certainly a good effect, being given at the time when the symptoms of the craving came on, Quinia was used as a

stimulant to the heart and the cerebral circulation. Strychnia was given as a heart tonic after complete withdrawal of morphia.

When nervousness is great, or insomnia does not yield to other means, drugs may be necessary. In these instances, cannabis indica in large doses ($\frac{1}{2}$ to 1 drachm of fl. ext.), sulphonal, chloralamid or bromides will often render good service. Chloral is used by Erlenmeyer, condemned by Aurleck and others. Dr. Jennings seems latterly to have usually substituted digitalis *per os* for spatrein hypodermatically. Quinia has seemed to me in many cases of distinct value. Strychnia is one of the best heart tonics in the pharmacopœia.

Obersteiner is almost the only writer of note who now speaks well of cocaine. If used at all, it should never, of course, be placed in the hands of the patient himself. The fluid extract of coca has been highly spoken of by several writers to relieve restlessness and depression. Valerianate of ammonia has been a common favourite since the time of De Quincey.

This method, which, so far as we are aware, is original with and peculiar to Dr. Mathison, is merely a new application of a well-established principle, for the power of the bromides to subdue abnormal reflex irritability is so constant that it may be looked upon as an invariable

sequel of such medication. Dr. Ed. H. Clarke, in his valuable treatise on the bromides, says: "Diminished reflex sensibility, however different physiologists may explain the fact, is one of the most frequent phenomena of bromidal medication that has been clinically observed, and is, therapeutically, one of the most important." The testimony of other distinguished observers is to the same effect—Cubler, Guttman, Laborde, Voison, Damourette, Eulenberg, Claude Bernard, Brown-Sequard, Echeverria, and Hammond all giving evidence as to the power of these agents to impair the control of the spinal cord over reflex manifestations, and, at the same time, exert a marked influence over the general nervous system. Admitting that the symptomatology of opiate abandonment pertains almost exclusively to the functions over which the bromides exert so decided a control, we have in the treatment of opium inebriety a new field presented for the exercise of this valuable property; and the fact, proven conclusively by our experience that it *does* exert this happy effect, fully supports the idea advanced as to the pathology of this disease.

In speaking of the bromide of sodium, let it be understood that we refer entirely to the influence of the *continued dose*, by which we mean its administration three times in the twenty-four

hours, at regular intervals, so as to keep the blood constantly charged with the drug. A most important difference, physiological and therapeutical, exists between the effect of this mode of exhibition and that of the single dose, or two or three doses so nearly together as to form practically one, for in the former case the system is constantly under the bromide influence, while in the other the drug, being largely eliminated in a few hours, the blood is nearly free from it a large portion of the time. Results obtainable from the continued use cannot be gotten from the single dose, and, as a consequence, its value is far greater in the disease under consideration.

Again, the action of the continued dose being somewhat remote, three to five days usually elapsing before there is decided evidence in this direction, much more desirable results are secured by its employment for several days *prior* to an entire opium abandonment, meanwhile gradually reducing the opiate, than if the withdrawal be complete, and then reliance placed on the bromide to control the resultant irritability ; for in one instance the maximum sedative effect is reached at the period of maximum disturbance from the opium removal, and its counteracting and controlling effect is far in excess of that to be had from its employment subsequent to the

lighting up of the nervous irritation. What, then, we style *preliminary sedation* forms a peculiar and most valuable feature in our administration of the bromide, and it is this particular point we commend to you, our experience having convinced us we have in it unequalled means of obviating the suffering incident to the treatment of this disorder.

The value of the various bromides depends on their proportion of bromine. Bromide of potassium contains 66 per cent., sodium 78, and lithium 92 per cent. We should, therefore, expect a more powerful influence from the latter agent; and, according to Wier Mitchell, it has a more rapid and intense effect. Bromide of sodium being richer in bromine, and pleasanter to the taste, we prefer it to potassium.

Either of the bromides, in powder or concentrated solution, is somewhat irritant, sometimes provoking emesis, and in any event delaying its absorption. A practical point, then, is that it be given largely diluted. Dr. Clarke says, "There should be at least a drachm of water to each grain of the salt." We give each dose of the sodium in six or eight ounces of cold water, and have never known it to cause vomiting.

Another important feature relates to the time

of its employment. We usually administer it at 10 a.m., 4 and 10 p.m., or half an hour before each meal. Given thus, largely diluted, it is probably absorbed in half an hour, and the effect of the continued dose rapidly secured.

To produce the requisite degree of sedation within a limited period, it is essential that the bromide be given in full doses. I am convinced that failure in its use, in any neurosis, is very often due to a non-observance of this point. Our initial dose of the sodium is 30 grs. twice daily, time and mode as stated, increasing the daily amount 30 grs. each day, *i.e.* 40, 50, 60 grs. and continuing it eight days, reaching a maximum dose of 100 grs. twice in the twenty-four hours. This period may last a week or more, depending on some state of the blood and power of elimination. During this week of bromidal medication, the usual opiate is gradually reduced, so that on the seventh or eighth day it is entirely abandoned. A decrease of one-third or one-half the accustomed daily quantity is made at the outset, experience having shown that habitués are almost always using an amount in excess of their actual need, and this decided reduction occasions little or no inconvenience. Subsequently, the opiate with-

drawal is more or less rapid according to the increasing sedation, the object being to meet and overcome the rising nervous disturbance by the growing effect of the sedative—in other words, maximum sedation at the time of maximum irritation.

Having secured the sedative effect desired, the object is to eliminate the bromide as rapidly as possible; and as the skin and kidneys form the only outlets, recourse is had at once to diaphoretics and diuretics. Of the former, hot and steam baths are to be relied upon. And, of the latter, digitalis, in effusion, or, if bulk be objectionable, Squibb's fluid extract combined with potass. acet. and spirits æther nitrosi. The bromide itself increases renal secretion, and, aided by the others, it passes from the system in a few days. The bromide and opiate having been discontinued, restlessness, more or less prominent, from twenty to fifty-six hours, invariably supervenes. It is controlled by codeine, 1 to 3 grs. subcutaneously, or by mouth, every two to four hours; and this is continued, decreasing the dose or increasing the interval till no longer needed, but is greatly relieved by hot — not warm — baths, temperature 110° to 112°, fifteen to thirty minutes' duration, repeated as required. They are often signally

effective. We have known a patient fall asleep, snoring vigorously, while in a bath.

Sleeplessness is always more or less prominent after opium abandonment. During the first six nights, sulfanol or trianol in 30 or 40 gr. doses is given. Afterward, such hypnotic as seems best suited to the case; chloral is most effective in 20 or 30 gr. doses at bedtime. Often smaller doses may be given at intervals of two hours until sleep follows, with good results.

A peculiarity of this insomnia is, that it is most marked in the early morning. Slumber comes readily enough at night, but patient awakes at two, three, or four o'clock, and finds further sleep impossible. Often it is well to defer the sleeping draught until this time. This waking tendency gradually diminishes, and ultimately disappears.

Chloral given during the early opium abstinence has, with us, not acted kindly as a hypnotic, but produced a peculiar intoxication, though we have never noted the wild, maniacal delirium mentioned by Dr. Levenstein as occurring during this period in his cases. As soon as possible it should be discontinued, and sleep secured by a fatiguing walk, a half-hour's warm bath, a light lunch or glass of milk—one or all, before retiring.

For three or four days following the opiate

withdrawal the diet should be *exclusively* of milk combined with lime-water—one or two ounces, with one or two drachms respectively—every hour or two. It is very seldom rejected, and is preferable to beef tea or anything else. Afterwards, a full, solid diet may be resumed, soon as practicable.

While diarrhœa is the decided *exception* under this plan of treatment, we still deem it best to keep the bowels in good condition, and administer the first night a mercurial cathartic sufficient for several full evacuations, followed during the bromide giving by daily laxative enemas, or doses of Hunyadi water.

Debility of varying degree, due to the opium abstinence and bromide relaxation, is among the sequelæ. It decreases with the increasing bromide elimination, aided most effectively by general faradisation, twenty minutes morning seances daily, after the restlessness subsides, and strychnia $\frac{1}{20}$ gr. thrice daily, combined with iron, quinine, phosphorus, digitalis, or cod-liver oil, as most required.

The following formulæ are valuable :

℞ Strychnine, 2 grs. ; muriated tinct. iron, 5 oz. ; tinct. digitalis and glycerine, of each 2½ oz. *M*. Dose — One to two drachms three times daily.

℞ Strychnine, 4 grs.; dialised iron, 5 oz. *M*. Dose—One-half drachm three times daily.

℞ Strychnine, 2 grs.; dilute phosphoric acid and syrup of ginger, of each 2½ oz. *M*. Dose—One drachm thrice daily.

℞ Pyrophosphate or iron, 5 to 10 grs.; quinine, 2 grs. at a dose. *M*. Pill, or solution, three times a day, if the appetite be slow in returning.

℞ Comp. tinct. quassia, one drachm; tinct. capsicum, 10 drops. *M*. For one dose, diluted, twenty minutes before each meal.

Strychnine is not advisable *during* the bromide administration. Being decidedly antagonistic,—one causing relaxation and deficient reflex excitability, the other just the reverse,—the desired sedative effect may be materially delayed if they be given together. Subsequently, it is the most valued general tonic at command, and may be continued in varied combination for weeks. With the strictly medicinal course are to be employed a full nutritious diet, out-of-door exercise, especially walking, and varied social enjoyments—in fact, anything that can exert a roborant effect on mind or body.

Surprise may be expressed and objection

made regarding the extent of the bromide doses, but the fact must never be overlooked that we are not to be governed in the giving of any remedy by the mere numerical amount of drops or grains, but by the effect produced. Again, I am led to think that one effect of opium addiction is a peculiar non-susceptibility to the action of various nervines, necessitating their more robust exhibition to secure a decided result. More, and most important of all, under the influence of certain abnormal conditions, doses which ordinarily are toxic become simply therapeutic. The annals of medical literature abound with illustrations in support of this statement, and among the most striking may be noted the following :—Dr. Southey read before the Clinical Society of London notes of a case of idiopathic tetanus which occurred in a boy ten years old. The first symptoms of trismus were observed two days after a severe fright and drenching due to the upset of a water-butt. They steadily increased up to the date of his admission to St. Bartholomew's Hospital, upon the eighth day of his illness, when the paroxysms of general opisthotonos seized him at intervals of nearly every three minutes. Each attack lasted from fifteen to thirty seconds; and although between the seizures the muscles of the trunk became less rigid, those

of the neck and jaw were maintained in constant tonic cramp. The patient was treated at first with chloral, 10 grs., and bromide of potassium, 20 grs., every two hours, and afterwards with the bromide alone in 60-grain doses every hour and a half. When about two ounces were taken in the twenty-four hours, the attacks became less frequent; but at first each separate seizure was rather more severe, and upon the evening of the eleventh day he was able to open his mouth better.

On the thirteenth day the bromide was decreased to 20 grs. every three hours, and on the fourteenth day was discontinued altogether. When the bromide had been omitted for twenty-four hours, the attacks returned at intervals of an hour, and the permanent rigidity of the muscles of the neck was re-established. His condition now steadily became worse, so that on the eighteenth day of his illness it became necessary to resort to the previous large doses—one drachm—every hour and a half. After three such doses the expression became more natural, and he was able to open his mouth again; but it was not till the twenty-fifth day of the disease that it was possible to discontinue the remedy. The patient remained in a state of remarkable prostration and drowsiness, sleeping

twenty-four hours round, and only waking up to take his nourishment for eight days, and passed all his evacuations under him. He subsequently steadily and rapidly convalesced. The bromide produced no acne or other disagreeable symptoms, and certainly appeared to exert marked inhibitory influence upon the tetanus.

Surely, under ordinary circumstances, no one would think of giving such extensive doses of the bromide; but here, under the antagonising influence of the intense reflex irritability, their effect was vastly beneficial, conducing, unquestionably, to the patient's cure.

Given as we recommend, no effect is usually produced by the bromide before the third day. From the third to the fifth, an unpleasant taste is complained of; the bromic breath begins; the patient is disposed to drowse, and there is a growing indisposition to muscular exertion. From the fifth to the seventh these symptoms increase—the tongue begins to fur; the odorous breath is marked; the drowsiness deepens into sound sleep, more or less prolonged, and the inaptitude for physical exercise becomes so decided that patients generally take to bed on the last day. The following two or three days—during the period of maximum disturbance from the opium withdrawal—are characterised

by a persistence of the symptoms alluded to. Patient remains, more or less restlessly, in bed. General relaxation is decided; the pulse is less frequent—usually about 60; the voice somewhat weakens; pupils dilated; the renal secretion augmented—though, sometimes, diminished; the saliva increased and rather viscid, and mild hallucinations of sight and sound—almost always of sight—occur, occasionally, for three or four days, accompanied with a peculiar aphasic tendency, as shown by substituting one word for another—Mediterranean for Mississippi; Brown instead of Iowa, etc. This curious symptom may occur at increasing intervals for several days.

Dr. Clarke refers to such instances. He says: "They are hints of a distinct organ of language, and suggest the notion that, inasmuch as the drug we are considering paralyses reflex, before it does general sensibility, language may be the expression or correlation of a peculiar reflex power."

After the ninth or tenth day the bromidial manifestations gradually disappear, so that within two weeks from beginning of treatment, patient is generally up, and the only prominent symptoms remaining are the debility and insomnia. Tonics, hypnotics, and vis medicatrix

naturæ effect speedy convalescence, and—where treatment is begun on entrance—patients are usually dismissed, cured, within a month.

More than one week's employment of the sodium is not advisable, lest the hallucinations become unpleasantly persistent; and cases will present in which a minor degree of administration—five or six days—will suffice.

Marked general debility contra-indicate the bromide, and a tonic course should precede it.

Granted a case suitable for treatment, this method may be summarised as follows:—Opiate reduced, at once, to one-half or two-thirds usual quantity. Subsequent gradual decrease and entire withdrawal in seven or eight days. Mercurial cathartic, first night, followed by daily laxative enemas, or Hunyadi water. Bromide of sodium, 30-grain doses, increased thirty grains daily, in six or eight ounces water, on empty stomach, continued five to seven days. Restlessness following opium abandonment met by hot baths, 100° to 110°, ten to thirty minutes each, often as required. Bromide eliminated by diuretics—digitalis and nitre, and diaphoretics—hot and steam baths. Insomnia relieved by chloral, combined, if need be, with Indian hemp or hyoscyamus. Diet exclusively milk and lime-water—first three days of opium abstinence.

Full diet resumed as soon as possible. Debility removed by generous living, general faradisation, strychnine, iron, quinine, etc., with out-of-door exercise and varied social enjoyment.

For relief of neuralgic pain, varied measures suffice. Leading the list are electricity and the local use of ether. As to the value of the galvanic current in migraine and other neuralgias, so common in opium habitués, and the manner of using it, the reader is referred to papers by the writer. The same agent is effective in relieving limb and lumbar pains, though here a much stronger current is required than can be used with safety about the head. Sometimes a faradic current acts well; and when one fails, trial should always be made with the other. Local hot baths are often of great service.

Regarding the ether, those who have never used it will, we think, be surprised at its pain-easing power. In either way applied—spray, drop or lavement—it is potent for good.

These three—electricity, ether, hot water—are valued anodynes, and one special point in their favour is entire freedom from unpleasant gastric or other result.

Other remedies relieve, at times; of the coal-tar salts, phenacetine, or phenocoll, 10 to 15 gr. doses are best. It has often a hypnotic effect.

A valued external anodyne is: menthol, 1 part; chloroform, 10 parts; ether, 15 parts,—used as spray.

Under this plan of treatment marked disorder of stomach or bowels is rare. Our rule is to give a mercurial or other cathartic at the outset, if there be alvine torpor, and then secure regular action by such laxative as seems best. If restraint be needed, large enemas of hot water may be used. This failing, 1 to 3 grs. sulphocarbolate of zinc, 10 to 20 minim doses of fluid extract of coto, in capsules, or 40 to 60 grs. of subnitrate of bismuth every four hours. If, however, it persists, the best thing is a full opiate—tinct. opii, per mouth or rectum, at bedtime preferred. This promptly controls, gives a full night's sleep, and the trouble seldom returns. Fear of a bad effect on convalescence is unfounded.

Diet is not restricted, unless the condition of stomach or bowels demands. We have again and again seen patients recover who did not vomit once, or who had only two, three, or four movements daily. The excessive vomiting mentioned by Levenstein and Obersteiner—abrupt disuse—we have never noted. The former thought the collapse—which we have never seen—in several of his cases was due to

vomiting and purging. More likely the largest factor in causing it was the exhausting mental and physical suffering which his method entails. If the stomach rebels, entire rest for a time, or milk and lime-water, ale and beef, malted milk or bovinine, in small amount, may act well. If not, sinapisms, ether, faradism, or chloroform, alcohol and ice are of value. All failing, a full opiate hypodermic will promptly suffice.

Twenty-four hours after the opiate-quitting, patients are directed to bed, and kept there two to four days, for we are convinced that rest is an aid of great value. Erlenmeyer says: "The best remedy is rest in bed. The importance of quiet, rest in bed, and warmth in promoting restoration during the abstinence struggle, cannot be overestimated. I order every patient to bed at the start, and can state with confidence that those who submit to this till I allow a change will get along more easily and satisfactorily during the treatment than others who do not obey, but who insist on moving about or having the run of the premises."

Having thus crossed the opiate Rubicon, treatment pertains, mainly, to the debility and insomnia. For the former, coca leads the list. If fluid extract, 2 to 4 drachms, or cocaine, 1 to 2 grains, with other tonics, decreasing as need

lessens. As a rule, its use is ended in a fortnight. To remove the mental and physical depression, the minor neuralgias, and the desire for stimulants sometimes noted, nothing equals it, and full doses of tincture of capsicum often add to its value.

Another agent of much service is general faradisation, twenty minute séances daily. This imparts a feeling of exhilarating comfort; but care must be taken not to overdo, for a current too strong or long makes mischief, overstimulating and exhausting to the extent, it may be, of several days' discomfort, which nothing but time will remove.

Faradism also acts kindly in easing the peculiar unrest—"fidgets"—and the nagging aches in legs during convalescence. It may be applied in the usual way, or through the special electrodes we have devised.

Galvanism is another general tonic of value. Our method is positive pole to nape of neck and negative to epigastrium for five minutes, then the former behind the angle of each jaw for a minute or two, making entire séances seven to nine minutes.

Another valued tonic is the cold shower-bath. With many it is a great invigorator, and patients who dread it at first come to appreciate it highly.

Internal tonics have a place in the roborant régime. Most habitués are below par, and it is our custom to give such from the start—phosphorus, strychnine, arsenic and quinine, combined. After the opiate-quitting, coca, in some form, can be added. If anæmic, ferri tincture, or Blanchard's pills. Caffein is of value. It is stimulant, tonic, and diuretic. We sometimes give it with codeine and cocaine. Digitalis is often useful. In some cases cod-liver oil is of service,—with pepsine and quinine, with malt, with phosphates, or plain,—and may be given for months.

Some anorexia is usually present, yet it may not prevent the regular meal, and need never occasion anxiety, for it will likely give place to a vigorous appetite, which may be encouraged to fullest feeding short of digestive disaster. If it be slow in returning, $\frac{1}{2}$-grain doses of cannabis, an hour before meals, often have a marked effect.

Regarding the insomnia, Levenstein said: "Sleeplessness, which is generally protracted up into the fourth week, is very distressing." Our record differs. Wakefulness is an invariable sequel, but usually not so marked nor prolonged; and in ordinary cases recovery can generally be promised, without the loss of a single entire night's sleep. We have known a patient able

to dispense with hypnotics in five, others in eight, and the average, in a series of cases, was eleven nights.

The insomnia is of two kinds. Most patients secure sleep on retiring, but waken early—three or four o'clock—and fail to get more. Others remain awake nearly all night before slumber comes, and these usually require soporifics the longer. For relief of this, cannabis indica will often suffice. The hemp is given in 40 to 60 minim doses, in capsules, or mixed with glycerin, or ginger syrup, two hours before bedtime. There may be noted, in some, laughing and talking during the first hour, tending to sleep in the second. Many require nothing else. At the end of a week it is lessened, and usually ended in ten or twelve days.

Other hypnotics, chloral, chloralamid, trional, sulfonal, paraldehyde, hypnal—in full doses, often work well.

Chloral, during the first five or six nights of opium abstinence, fails as a soporific, often causing a peculiar excitement or intoxication,—patients talking, getting out of bed and wandering round the room,—followed after several hours by partial sleep. Later, in full doses—we prefer 40 grs. at once, rather than two 20-grain doses—alone, or with a bromide, it can be relied on.

If, as rarely happens, the sleepless state is so pronounced or prolonged as to distress patient, we never hesitate to give a full opiate, by mouth, and with good result. Erlenmeyer says: "In such cases there remains nothing to do but to resort to morphine. I give, then, the alkaloid internally, on two consecutive evenings; a certain cumulative effect takes place. The first night, in the dose of ½ grain, there is usually no sleep; but on the second night, after giving the same dose, a sound sleep of six hours will ensue. I have not observed any special danger from these resumed doses of morphine, although I feared it; but after I was constrained, in several bad cases, when every other medicine had failed, to resort to this, I was convinced that my fear was groundless."

In all cases drugs should be dropped as soon as possible, and sleep secured by a walk or other exercise—an electric séance, a Turkish or half-hour's warm bath, a light meal, a glass or two of hot milk, one or more of these before retiring, Patients whose slumbers end early often note a peculiar depression on waking; and if so, a lunch, hot milk, cocoa, coffee, beef, or bovinine should be at command.

It may be well in passing to refer to certain minor sequelæ and their treatment. If dyspnœa

or palpitation, a stimulant—cocoa with capsicum or Hoffman's anodyne with aromatic spirits of ammonia—will promptly control.

In aching pains in the calves, strong galvanic or faradic currents, hot water, massages, or ether will relieve. If a peculiar burning in soles, mustardised foot-baths. If marked hysteria, ether inhalations.

Belly pain may be eased by hot fomentations, or full doses of ether in hot water, or camphor with capsicum. The latter, with atropine injection, act happily in ovarian irritation.

Very seldom unrest and insomnia compel hyoscine. If so, hydrobromate $\frac{1}{100}$ to $\frac{1}{20}$ grain hypodermically, or double by mouth.

The late Norman Kerr recommended the following means of combating the opium habit :—

" In opium and morphia inebriety, in whatever form the narcotic has been taken, the procedure as to the withdrawal of the toxic agent ought to be different. It is just as desirable to withdraw the poison as speedily as may be practicable in opium and morphia, as in alcohol, inebriety. But the difficulty here lies in the practicability. Both plans have been tried in opiate and morphine inebriety. The narcotic has been suddenly withheld, and it has also been gradually tapered off. Levenstein, who advocates the heroic course,

has been ably answered by Dr. J. B. Mattison, who adopts the slower, more pleasant, and surer method. Among other distressing symptoms after sudden withdrawal, the following have been observed in an aggravated form :—Rigors, nausea, vomiting, exhaustive diarrhœa, convulsions, delirium, prostration, collapse. Languor and sneezing are minor troubles. The agony is in many cases indescribable, and the symptoms are so alarming, that the full narcotic dose of the drug has had to be given to avert a fatal issue. My sympathies are with the heroic course, but the sufferings undergone, with some risks (such as paralysis), consequent on the peremptory stoppage of supplies, have forced me to the conclusion that gradual diminution of the dose ought to rule.

"There are cases in which immediate cessation of the drug occasions comparatively little distress, and is successful; but these have been, so far as I have seen, exceptional. I generally spread the periods of gradual diminution of the dose till entire discontinuance of the drug, over four or five weeks. The length of this tapering-off process, however, depends chiefly on the daily amount of opium or morphia used, while taking the idiosyncracy of the narcotee and the effect of the poison on the individual constitution into account. Occasionally three weeks suffice, but the duration sometimes extends over eight weeks.

"Here potassium and sodium bromides are

generally indicated in considerable doses to subdue the extreme nervous irritability, with henbane and cannabis indica. The quantities administered must vary with the individuality of the case. Bearing this in mind, the formula appended may be taken as a guide :

℞ Potass. bromid. . . .	gr. 20.
Sodii bromid. . . .	,, 40.
Tr. cannabis indic. . .	fl. ℥ xv.
Tr. hyoscyami . . .	fl. ,, xx.
Sp. ammon. aromat. .	fl. ,, xx.
Tinct. cardamom. co. .	fl. ,, xx.
Aq. destillat. ad . .	fl. oz. iij.

"*S.* The draught at bedtime, followed by a copious drink of cold water.

"When the patient can bear the immediate, or almost immediate, withdrawal of the drug, a much smaller dose of this bromo-hyoscyamine mixture, repeated once or twice, will be ample. After a day or two, tonic treatment can be begun.

"The crave for opium or morphia is dependent on an abnormal physical condition, which it has been claimed that sparteine and nitro-glycerine relieve. I have not seen occasion for the exhibition of the former, and only once or twice for the prescription of the latter, the use of which involves too serious a risk to justify the administration of it except very rarely, and with extreme caution. Professor Benjamin Ball and

Dr. Oscar Jennings have made a splendid contribution to the literature of morphino-mania, but it has occurred to me that perhaps the greater need they have met with for the trial of such remedies may have arisen from sudden withdrawal of the narcotic. Sparteine is administered hypodermically in the form of sulphate in doses of from two to four centigrammes, and nitro-glycerine is given in tablets or in a one per cent. alcoholic solution.

"In opium inebriety there is often severe and prolonged sickness, during the earlier stages of treatment especially. When these symptoms are present, I find it advantageous to administer the bromides in something like this form for a few days, till the night draught can be retained:

℞ Potass. bicarbonat. . . .	gr. 120.
Potass. bromid. . . .	,, 60.
Sodii bromid.	,, 90.
Tinct. cannabis ind. . . .	fl. ♏ 30.
Sp. ammon. aromat. . .	fl. dr. j.
Tr. cardamom. co. . . .	fl. dr. j.
Aq. destillat. ad . . .	fl. oz. vi.

A sixth part three times daily in effervescence with an acid powder.

℞ Acid. citric., 6 powders of 15 grains each.

S. The acid powders.

Tinct. nucis vomicæ should often be added to the above mixture, in 3 or 4 minim doses.

In some cases an ordinary dose of pil. saponis

co. (Sapon. cum opio), not oftener than once in seven days, acts like a charm; but I do not care to resort to this unless in extreme cases. Another potent remedy is $\frac{1}{100}$th of a grain of hyoscyamine administered subcutaneously; but this must be used with great caution.

"Coca has been much lauded in the treatment of opium inebriety, but I have never seen any need for its use, and so can say nothing in its favour.

"In most cases I begin the treatment with 4 grs. of blue pill, followed by a black draught or Seidlitz powder next morning.

"Ice, milk and lime-water, or milk and soda-water, will aid in counteracting the vomiting.

"In all cases great attention should be paid to the diet, which should be nourishing, easy of digestion, and such as will not be rejected by the stomach. Peptonised milk, Carnick's beef peptonoids, staminal food, Valentine's beef juice, broths, soups, and similar preparations are good. As soon as it can be borne, white fish cut up fine, with a little of the juice of a lemon, is very grateful. Fresh fruits and green vegetables are refreshing, and can be taken with benefit before and after fowl and flesh can be retained and assimilated. Fatty foods, when these agree, are of great value in the remedying of nerve starvation.

"In certain cases the Turkish bath aids in procuring sleep as well as in soothing the nervous irritability. At other times these objects will be secured more easily and cheaply, occasionally

more effectually, by the wet pack, which, however, must be carefully applied, or it will do more harm than good. Dip a sheet in hot or tepid water, the former being preferable. Wring the wet sheet well, and closely envelop the whole body (except the head and neck) in it. Above this, leaving no part of the damp sheet uncovered, roll a blanket round the body. Then add successive wrappings of a couple or more blankets. The patient will generally be in a profuse perspiration within three-quarters of an hour. He should not be allowed to remain in the pack longer than 75 minutes, even when sleep has not been won. The application may in suitable cases be repeated daily, every second or third day, according to the circumstances. To avoid any possible risk, the pack should be applied not less than two hours or more than three hours after food. I have seen an excellent calmative influence exerted on the opiist by this simple and agreeable procedure. Wherever this pleasant sedative soporific can be employed, in all forms of inebriety I prefer it to the exhibition of large doses of narcotic drugs to secure sleep. That it is a pleasant process I have had many a happy experience, having a vivid recollection of how annoyed I used to be with the bath attendant, when undergoing this treatment during an attack of blood-poisoning, for always rousing me out of a delicious snooze when he came to unwrap me. The well-wrung hot-water sheet is an admirable

soother of nerve perturbation, and it is impossible for me to speak in too high terms of its efficacy in lessening the extreme restlessness occasioned by the reflex nervous irritation, which, with sleeplessness, signalises the first week of the treatment. This remedial measure is also potent to procure sleep, and has not the drawback of disturbing the system, which belongs to chloral and other narcotics.

"I pursue a somewhat similar course of treatment in morphia injection, the dose being steadily diminished day by day, a weekly full narcotic dose of opium with belladonna, or chloral with bromides, at night instead of that day's reduced hypodermic dose.

"I never allow opium or morphia inebriates any alcoholic intoxicant. The Eastern proverb, 'One death is bad enough, two or three deaths are the very devil,' is peculiarly applicable here. There is a danger of alcohol or chloral inebriety being added to the opium habit. The cases of this double and treble narcomania which I have seen have been too sad, nearly all having ended in suicide, for me to run the risk of promoting such a combination and development."

The New Chinese Treatment of the Opium Habit

The treatment does not come from China but from the Straits Settlements, and the name was

given to it because it was discovered by the Chinese in that country. The story of the discovery is as follows :—Some Chinese woodmen while at work ran out of tea, and, being of a resourceful nature, collected some leaves of a climbing plant called *Combretum sundaicum,* which they roasted and made tea of. Apparently the tea was sufficiently satisfactory to induce them to continue its use. The Chinese have the reputation of being the most economical people known ; they waste nothing. Instead of emptying the ashes of their opium pipes away they put them into the teapot. The carrying out of this habit by the Chinese woodmen had a remarkable effect, namely, they found that they lost all desire to smoke their opium. On returning to the Settlement they told others of their discovery ; tests were made, with satisfactory results. The matter was brought to my notice, and I obtained a supply of the roasted leaves direct from the Settlement. These came mixed with a considerable proportion of small twigs cut into lengths of 2 inches or 3 inches. A decoction of this is made as follows : $2\frac{1}{2}$ oz. of the mixed leaves and stems are weighed. The stems are then bruised in an iron mortar, and over the whole is poured 80 oz. of boiling water ; the vessel being then covered, it is placed where it will simmer for four hours,

after which the cover is removed, and when the contents are reduced to 40 oz. it is strained through butter-cloth. The method of its use is as follows: If the patient is an opium smoker, a quantity of opium equal to what he uses daily is burnt and the ashes mixed with 20 oz. of the preparation. This is put into one bottle and labelled "A." Of this he is given ½ oz. several times a day, at such times as he may feel the need of the drug. Six or seven doses a day is generally the amount used. The bottle is kept filled by adding from bottle "B" (which contains the remainder of the decoction which has had no opium added to it). When the contents of bottle "B" is used up, the patient then finishes entirely from bottle "A," without anything further being added to it. I have tried the remedy upon the cases commonly met with in this country, *i.e.*, morphia users, laudanum, paregoric, and chlorodyne takers, the particular drug used by each patient being added to bottle "A" in the same way as the opium ashes mentioned above. If one bottle of the preparation should not be enough to complete the cure, then a second bottle is prepared, adding a much reduced quantity of the drug to bottle "A." Three bottles are generally sufficient to effect the cure. The results of the treatment are remarkable in some

cases. Patients who have struggled for years to master the habit without success are able to do so by the aid of this drug. Another striking feature is the absence of the need for restraint in many cases. Patients were given the remedy to use at home, with instructions to report every five or six days. A further feature of the treatment is the unanimity with which the patients express the absence of unpleasant symptoms during the withdrawal of the drug.

Being the first to use the drug in this country so far as I know, I desire to restrain all enthusiasm, and to record only such results as I can personally vouch for. It is always unwise to say too much about a new remedy, and I feel that a greatly-increased experience of the drug than I have been privileged to enjoy is necessary before one is justified in recommending it strongly to the profession. My present opinion may be summed up as follows :—

First, If the patient is earnestly desirous of being cured, has the average amount of will-power, the habit of moderate dosage, and fairly recent, he will find the drug all that is necessary to enable him to overcome the craving without restraint or discomfort.

Second, In more advanced cases with feebler

will-power it is a valuable aid to other treatment, and restraint is not necessary.

Third, In all inveterate cases where restraint and constant supervision are necessary, I consider it well worth a trial in conjunction with other remedies. Personally, I use it in all drug cases which come to me for treatment. With this drug and the auto-condensation couch of high frequency many difficulties in the treatment of the drug habit are solved. If the case is a very chronic and obstinate one, the use of mechanical massage, in addition to the above, will still further lessen the difficulties of treatment, and render great comfort to the patient. Where this is available it should always be given a trial—the results are often most agreeable to the patient and surprising to the doctor.

The following cases will illustrate the usefulness of the drug :—

Case I.—Woman, aged 40, had become addicted to the use of morphine in the form of chlorodyne, the latter being suggested by her nurse for the relief of abdominal pains. She had been unable to do without the drug for several years, her general health had given way, and she was in a deplorable condition. I put her upon a liquid form of *Combretum sundaicum*, and in five days she did without any chlorodyne,

and was quite well at the end of three weeks.

She was under no restraint whatever, and only saw me on four occasions during the time she was under my care. She had no companion or attendant to help her regulate the treatment. After leaving off the chlorodyne the patient had a return of the abdominal pains, but these rapidly subsided when a few doses of phenacetine had been administered. During the last two weeks of treatment the general health rapidly improved on the addition of some simple vegetable tonics to the remedy.

Case II.—A medical man who had lost his practice through the use of laudanum, and who was trying to earn a living as a traveller, came under treatment in April 1907.

He was thirty years of age, and could do very little work owing to his broken health. I placed him under a decoction of *Combretum sundaicum*, and told him to reduce the drug as rapidly as he felt he was able to. It took him three weeks to leave off the opium, but he admitted that it was done without the slightest inconvenience; and I am convinced that if he had had any one to advise and help him, he could have left it off quite as easily at the end of ten or twelve days. He reported himself to me whenever he required a fresh supply of medicine, and worked during the whole time of his treatment. His general health

greatly improved during the course, and when he left off taking the remedy I prescribed a simple tonic for a week.

Case III.—A man, aged 60, applied to me for treatment of the morphia habit. He reported himself as in too feeble a state of health to undertake the journey from Liverpool to London. I sent him the medicine in the form of a decoction at various intervals of four or five days for some six weeks. This was in May 1907. He had no attendant, and I had to depend upon his wish to get well. He gave up the use of morphia in fourteen days' time, although he had been a slave to it for many years. He then reported that he was still troubled by an old weakness of the bladder, which had prevented him from sleeping properly at night, but he thought the medicine was helping this also. I advised him to continue the remedy for a while longer, and report. The result was most satisfactory, all the vesicle symptoms clearing up and leaving the patient in a remarkable state of health, considering his age and complications. The only other drug used was a few doses of phenacetine for some rheumatic pains.

Case IV.—A young man, aged 24, who had used laudanum regularly for five years, was treated by a decoction of *Combretum sundaicum*, and gave up taking the opium in two weeks.

He then suffered from an attack of acute dyspepsia brought on by overfeeding, as he was under the impression that he required to take plenty of food to offset the withdrawal of the opium. He suffered great pain during the attack, and reverted to the laudanum in medicinal doses for two days. After I had relieved the gastric distress he left off the opium entirely, and rapidly regained his health. He worked throughout his treatment, with the exception of the three days of illness referred to. He came under treatment in April 1907.

Case V.—A medical man from the Midlands came under treatment in May 1907. He was forty years old, and had been a victim of morphia for ten years He came to London, took lodgings, and recovered so rapidly that in fourteen days he returned to work, although I strongly advised him to the contrary. He did not finish his treatment, and his case was not satisfactory. He has since asked to be treated under proper medical supervision, and admits that the remedy was of great help to him.

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